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THE LAMELLIBRANCHIA OF THE SIBOGA EXPEDITION.

SYSTEMATIC PART.

II

PELECYPODA

(EXCLUSIVE OF THE PECTINIDAE)

BY

B. PRASHAD, D.Sc. (Punjab & Edinburgh),
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With 9 plates and a chart.

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INTRODUCTION

The Pelecypoda [1]) of the "Siboga" Expedition collected by Professor Max Weber and his colleagues were entrusted to the celebrated conchologist Monsieur Ph. Dautzenberg of Paris, for study and report in the early part of the present century. The soft-parts of the various genera and species of the class, provisionally named by Monsieur Dautzenberg, were reported upon by Monsieur Paul Pelseneer [2]) of Brussels, and a joint report on the systematics of the family Pectinidae by Dautzenberg and Bavay [3]) was published in this series. The main part of the collection, however, still remained to be worked out, and although Monsieur Dautzenberg had done a great deal of preliminary work, he, owing to other engagements, the untimely death of his collaborator for the remainder of the work, Monsieur Henri Fischer, the World War and advancing age, felt that it will not be possible for him to complete the report. In 1927, therefore, Professor Max Weber, knowing that I was working on the Indo-Pacific Pelecypoda, suggested that I should finish the study of the "Siboga" Pelecypoda. Monsieur Dautzenberg not only readily consented to this arrangement and handed over to me the entire collection and the copious notes that he had made on it, but was also good enough to render me invaluable help in various ways in connection with this work while I was working in Paris in the early part of 1927.

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[1]) I have adopted the name Pelecypoda in preference to Lamellibranchia for the bivalve molluscs, as it is the more appropriate name.

[2]) Pelseneer, P. — Les Lamellibranches de l'Expédition du Siboga. Partie Anatomique. Mon. LIIIa, pp. 1—126, pls. I—XXVI (1911).

[3]) Dautzenberg, Ph. & Bavay, A. — id., Partie Systematique. I. Pectinidés. Mon. LIIIb, pp. 127—167, pls. XXVII, XXVIII (1912).

My grateful thanks are due to him for all this help, and, though the responsibility for the present work as now issued is solely mine, it owes a great deal to the earlier laborious work of Monsieur DAUTZENBERG on the collection; in fact, but for the condition in which I received the collections and Monsieur DAUTZENBERG's help and notes, the report would have been considerably delayed.

The main part of the preliminary work in connection with the preparation of this report was carried out in the laboratories of the Zoological Survey of India in the Indian Museum, Calcutta, but I soon realized that if the work was to be done properly, I must re-examine all the earlier material from the Indo-Pacific, which had formed the basis of the monographs of the different families and genera in the classical works of REEVE and SOWERBY's "Conchologia Iconica" [1]), SOWERBY's "Thesaurus Conchyliorum" [2]) and other rich collections which are preserved in the British Museum of Natural History, South Kensington, London. I, therefore, took the earliest possible opportunity when I could get away from my official duties in Calcutta, and in April, 1930, I went on leave to Europe. I worked during May and June on the "Siboga" collections in the British Museum, London, but later had to leave for America as I was deputed by the Government of India to visit the United States of America for studying the Natural History museums and museum administration in that country. I was away from London for 4 months, and it was not till the end of October, 1930, that I was able to resume my work in London on the "Siboga" Pelecypods. The report was finished by the middle of February, 1931, and the major part of the collection was returned to the Zoological Museum, Amsterdam. The types and other specimens which are figured in this work were brought back to Calcutta, and after the preparation of the photographs and illustrations have now been returned to Amsterdam.

In the following pages I have included as complete synonymies of genera as possible, but in several cases, where detailed information on the subject is available in DALL's classical work [3]), I have not deemed it necessary to burden the report with the information already contained in that work. A serious difficulty in reference to nomenclature and which was not anticipated by DALL, has arisen from the fact that he was apparently not acquainted with CHILDREN's work [4]). CHILDREN's conception of genotype or type as he called it, was far in advance of even most later authors, and, even though in several cases his selection of genotypes was not a very judicious one, his designation has to be accepted as the "type by original designation" (Article 30 of the International Rules of Zoological Nomenclature). This acceptance unfortunately upsets several generic names which have been in general use for a long time, but since the main object of the International Rules is stability of zoological nomenclature, and none of the names involved have already been placed on the official list of nomina conservanda, it is best that the correct names should be brought into use. I have carefully sifted

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1) REEVE, L. A. — Conchologia Iconica, I—XV (ex parte), London (1843—1865).
SOWERBY, G. B. — Vols. XV (ex parte) —XX (London, 1865—1878).

2) SOWERBY, G. B. — Thesaurus Conchyliorum, I—V (1842—1887). Some of the monographs in this series are the work of S. HANLEY. For dates of publication of the various parts see WOODWARD, B. B. — Catalogue of the books, etc. in the British Museum (Natural History), London, V, p. 1981 (1915).

3) DALL, W. H. — Contributions to the Tertiary Fauna of Florida. Trans. Wagner Free Inst. Sci. Philadelphia, III (1890—1903).

4) CHILDREN, J. G. — LAMARCK's Genera of Molluscs. This work was first published anonymously in Quart. Journ. Sci. Lit. Arts as follows: — Vol. XIV, pp. 64—86 (1822); pp. 298—322, pls. III—VI (1823); Vol. XV, pp. 23—52, pls. II, III, and pp. 216—258, pls. VII, VIII (1823) and pp. 241—264, pl. V, VI (1824).

all the available information and in this work have been very greatly assisted by the valuable contributions of WOODRING[1]), COX[2]) and STEWART[3]), whose work on palaeontological side has materially lightened the labours for the workers on the recent forms.

I have, following the ruling of the International Commission of Nomenclature (Opinion 96), accepted Museum Boltenianum[4]) names as valid, but the author of this work was undoubtedly P. F. RÖDING and not BOLTEN. The work may have been done by BOLTEN in collaboration with RÖDING, an accomplished conchologist, in the same way as CUMING asked such authorities as REEVE, HANLEY, ADAMS, PFEIFFER, RÖMER, FRAUENFELD, DESHAYES and others to name and arrange his collections. In any case the work, even in the first edition, was published after BOLTEN's death and, as is clear from the preface, the literature references etc., which alone have made the acceptance of the work possible, were the work of RÖDING. There is thus no justification for crediting BOLTEN with any part of the work, and I have, therefore, cited RÖDING as the author of all genera and species that have to be accepted from Museum Boltenianum.

A similar case is that of a number of species of different families the authorship of which has usually been ascribed to DESHAYES. As has been pointed out by TOMLIN[5]) there can be no question that these species were described and named by DESHAYES, but his descriptions of the species — for, in no case were any of the species figured — which were published in the "Proceedings of the Zoological Society of London", were not actually issued till after REEVE's descriptions and illustrations of several of these species in the "Conchologia Iconica". The issues of the "Proceedings" for the years 1830—1858 were irregular, and the annual volumes for the different years were not actually printed till a year or two after the real date. In the following account I have taken the actual dates of issue rather than the years of the volumes. Full details of the dates of issue for the several volumes are to be found in the volume of the "Proceedings" for the year 1893, pp. 436—440.

In the case of the old edition of MARTINI & CHEMNITZ's "Conchylien Cabinet" the first eleven volumes are certainly not binomial, and none of the names in these volumes can be accepted as valid. The twelfth volume by SCHUBERT & WAGNER published in 1829 is binomial, but it is doubtful whether in view of its being only a part of a non-binomial work, it can be accepted as valid. Similarly SCHRÖTER's[6]) "Index" of the first ten volumes issued in 1788, though binomial to a great extent, is not consistently so throughout, and cannot be accepted. In reference to the new series of the "Conchylien Cabinet", which was issued under the editorship of several distinguished authorities, it may be noted that this work was issued in several volumes with the different monographs numbered as Abtheilungen of the various volumes. The dates of publication of the different Lieferungen were not printed, and the date of publication of the last Lieferung, which is printed on the cover, has usually been taken as the year of issue of the

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1) WOODRING, W. P. — Miocene Mollusks from Bowden, Jamaica. Pelecypods and Scaphopods. Carnegie Inst. Publications N⁰ 366 (1925).

2) COX, L. R. — Neogene and Quarternary Mollusca from the Zanzibar Protectorate. Rept. Palaeontol. Zanzibar (1927).

3) STEWART, R. B. — GABB's California Cretaceous and Tertiary Type Lamellibranchs. Special Publications Acad. Nat. Sci. Philadelphia, N⁰ 3 (1930).

4) RÖDING, P. F. — Museum Boltenianum (1798).

5) TOMLIN, J. R. LE B. — Journ. Conch., XVII, p. 134 (1924).

6) SCHRÖTER, J. S. — Vollständiges Alphabetisches Namen Register über alle Zehn Bände Systematischen Conchylienkabinets. (Nürnberg, 1788).

completed volume. In the case of some volumes the dates of issue have been made available by Oostingh [1]), and I give below the complete information for the volumes dealing with various families and genera of the Pelecypoda.

Küster, H. C. und Kobelt, W. — Die Gattungen *Spondylus* und *Pecten*. Band VII, Abth. 2. This monograph was started by Küster, and pp. 1—128 and pls. I—XXXVI were published by him up to 1859. After his death, as is indicated in the introductory remark on p. 129, the remainder of the monographs was completed by Kobelt.

Pages	Plates	Dates
—	I—V, XIV	1842
—	XI—XIII	1843
—	VI, XV, XVIII	1844
—	VII, XVI, XVII	1848
1—32	VIII, VIIIa, IX, X, XIX—XXX	1858
33—128	XXXI—XXXVI	1859
129—152	XXXVII—XLII	1886
153—224	XLIII—LX	1887
225—296	LXI—LXXII	1888

Thiele. J. — Familia Limidae [2]). Band VII, Abth. 2a.

Pages	Plates	Dates
1—24	I—V	1918
24—48	——	1919
49—66	VI—X	1920

Dunker, W. — Die Gattung *Avicula*. Band VII, Abth. 3.

Pages	Plates	Dates
1—56	I—XVIII	1872
57—68	XIX—XXIV	1879
69—84	XXV—XXVII	1880

Clessin, S. — Die Familie Malleacea. Band VII. Abth. 1. This monograph was originally started by H. C. Küster, and pp. 1—16 of the text and pls. I, II, XVI—XXI were published in 1840, 1841. After his death Küster's text was canceled, and a new text and the remainder of the plates were issued by Clessin.

Pages	Plates	Dates
1—8	I, II, XVI—XXI	1840
9—16	—	1841
1—72	III—XVa, XXII—XXVIII	1890
73—108	XXIX—XLVI	1891

Kobelt, W. — Die Gattung *Arca*. Band VIII, Abth. 2.

Pages	Plates	Dates
—	I—IV	1841
1—56	V—XVI	1888
57—136	XVII—XXXIV	1889
137—160	XXXV—XL	1890
161—238	XLI—XLIX	1891

Küster, H. C. und Clessin, S. — Die Familie der Mytilidae. Band VIII, Abth. 3. Pages 1—12 of the text and plates I—VI were issued by Küster, and the remainder of the work was completed by Clessin after his death.

Pages	Plates	Dates
1—8	I, III, V	1840
9—12	II, VI	1841
13—28	VII—XII	1886
29—124	XIII—XXXII	1887
125—132	XXXIII, XXXIV	1888
133—156	XXXV, XXXVI	1889
157—170	—	1890

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[1] Oostingh, C. H. — Geol. Comm. Agr. Univ. Wageningen, N⁰ 9, pp. 322—362 (1925).

[2] No bibliographical information has been available in reference to this work, but the copies, which I have been able to examine, had the original wrappers and the only doubt I have is in reference to plates, but as the names of the species illustrated are not printed on the plates, the above dates may be taken as approximately correct.

DUNKER, W. — Die Gattung *Lithophaga*. Band VIII, Abth. 3a.

Pages	Plates	Dates
—	I—III	1880
1—8	IV—VI	1882
9—32	—	1883

KÜSTER, H. C. — Die Gattungen *Tridacna* und *Hippopus*. Band VIII, Abth. 4.

Pages	Plates	Date
1—8	I—III	1868

CLESSIN, S. — Die Familie der Chamiden. Band VIII, Abth. 5. Plates I, II were issued by KÜSTER in 1862.

Pages	Plates	Dates
—	I, II	1862
1—16	III—X	1888
17—56	XI—XX	1889

CLESSIN, S. — Die Familie der Cycladeen. Band IX, Abth. 3.

Pages	Plates	Dates
1—40	I—VI	1874
41—48	—	1875
49—56	—	1876
57—160	VII—XXX	1877
161—200	XXXI—XLII	1878
201—283	XLIII—XLVI	1879

CLESSIN, S. — Die Familie der Carditaceen. Band X, Abth. 1.

Pages	Plates	Dates
1—16	I—V	1887
17—60	VI—XIII	1888

LÖBBECKE, T. & KOBELT, W. — Die Gattung *Crassatella*. Band X, Abth. 1a.

Pages	Plates	Dates
1—16	I—VI	1881
17—41	VII—IX	1886

RÖMER, E. — Die Familie der Herzmuscheln, Cardiacea. Band X, Abth. 2.

Pages	Plates	Dates
1—26.	I—VI	1865
27—124	VIII—XIV	1869

KÜSTER, H. C. & RÖMER, E. — Die Familie der Dreiecks- oder Stumpfmuscheln. Donacidae. Band X, Abth. 3. Pages 1—8 of the text and plate I were issued by KÜSTER in 1841; these pages were later canceled and a new text issued by RÖMER.

Pages	Plates	Dates
1—8	I	1841
1—32	II—VII	1869
33—122.	VIII—XXI a	1870

KÜSTER, H. C. & RÖMER, E. — Die Familie der Tellmuscheln. Tellinidae. Band X, Abth. 4. Plates I—III were issued by KÜSTER in 1841.

Pages	Plates	Dates
—	I—III	1841
1—32	IV, VI, VIII, X	1870
33—176	VII, IX, XVI—XXXIII	1871
177—256	XXXIV—XXXVIII, XL—LII	1872
257—291	XXXIX	1873

KÜSTER, H. C. & PFEIFFER, L. — Die Familie der Venusmuscheln. Veneracea. Band XI. Abth. 1. In 1841—1842 pages 1—32 of the text and plates I—III, V—X, XI—XV were issued by KÜSTER, but the text was later canceled and a new text issued by PFEIFFER.

Pages	Plates	Dates
1—32	I—III, V—X	1841
—	XI—XV	1842
1—56	IV, XVI—XXIV	1868
57—160	XXV—XXXIV	1869
161—224	XXXV—XXXVIII	1870
225—302	XXXIX—XLII	1872

Küster, H. C. & Weinkauff, H. C. — Die Gattung *Mactra*. Band XI, Abth. 2. An earlier text of pages 1—8 issued by Küster in 1841 was canceled, but the plates II—V issued by him in 1841—1842 were utilised by Weinkauff in the monograph.

Pages	Plates	Dates
1—8	II—IV	1841
—	V	1842
1—36	I, VI—XII	1880
37—68	XIII—XXIV	1881
69—92	XXV—XXX	1882
93—124	XXXI—XXXVI	1884

Clessin, S. — Die Familie der Solenaceen. Band XI, Abth. 3. So far as I have been able to find, no text of this monograph was published by Küster, but plates III, V were issued by him in 1842.

Pages	Plates	Dates
—	III, V	1842
1—16	I, II, IV, VI, VII	1887
17—96	VIII—XXV	1888
97—106	—	1889

Clessin, S. — Die Familie Pholadea. Band XI, Abth. 4.

Pages	Plates	Dates
1—24	I—VI	1891
25—40	VII—XII	1892
41—88	XIII—XXI	1893

Clessin, S. — Die Familie Gastrochaenidae. Band XI, Abth. 4a.

Pages	Plates	Dates
—	I—III	1893
1—24	IV—IX	1894
25—57	X—XXI	1895

In connection with the rest of the bibliographic work I have consulted not only the two very rich sources of information, viz., Sherborn's "Index Animalium" and Woodward's Catalogue of the Library of the British Museum of Natural History, London, but also had the advantage of referring to the manuscript notes of Dr. C. Davis Sherborn on the various volumes in that rich Library. Dr. Sherborn was also kind enough to help me in looking up any difficult points in this connection, and my grateful thanks are due to him for his unfailing kindness at all times in connection with this very tiresome work.

I have drawn up the description of new species and varieties on comparative lines, as after a great deal of work on Molluscs I have found that elaborate descriptions unaccompanied by figures and without any comparative diagnoses with nearly allied species, are often worse than useless. For figures of species I publish, in most cases, direct untouched photographs, as these are far more accurate and true to nature, and in the absence of types for comparison such photographs are sure to be far more useful to later workers than drawings, however artistic and accurate these may be. In a few cases, where specimens could not be properly photographed I have resorted to finished camera lucida drawings. The photographs were prepared under my supervision by Babu S. C. Mondul and the figures were executed by Babu A. C. Chaudhuri and Babu D. N. Bagchi of the Zoological Survey of India with their characteristic skill; to all of them my thanks are due for the care they have bestowed on the work.

The synonymies of the various Indo-Pacific forms published in this work have been made as complete as possible, and notes on most of the classic material in the collections of the British Museum (Natural History), London, have also be included for making the report as complete as possible.

An analysis of the results of my studies is published in the following table. In this analysis forms which could not be identified specifically are not included.

PELECYPODA.

Families and Genera	No. of species and varieties collected by the "Siboga" Expedition	No. of new species and varieties
Order PROTOBRANCHIA.		
Family NUCULIDAE.		
Nucula Lamarck	11	7
Family NUCULANIDAE.		
Subfamily NUCULANINAE.		
Nuculana Link	13	11 (This includes a new name suggested for the preoccupied *N. (N.) acuminata* (Sowerby).
Yoldia Möller	1	
Subfamily MALLETIINAE		
Malletia Desmoulins	5	4
Neilonella Dall	4	4
Order FILIBRANCHIA.		
Family ANOMIIDAE.		
Anomia Linn.	1	
Placenta Retzius	1	
Family ARCIDAE.		
Arca Lamarck	31	2
Cucullaea Lamarck	1	
Limopsis Sassi	5	1
Glycymeris Da Costa	7	1
Family MYTILIDAE.		
Brachidontes Swainson	4	
Modiolus Lamarck	5	1
Musculus Röding	3	
Lithophaga Röding	4	
Solamen Iredale	1	1
Family ISOGNOMONIIDAE.		
Isognomon Solander	8	
Family VULSELLIDAE.		
Vulsella Röding	3	
Family PTERIIDAE.		
Pteria Scopoli	10	3
Pinctada Röding	6	
Malleus Lamarck	5	
Family PECTINIDAE.		
Subfamily SPONDYLINAE.		
Spondylus Linn.	9	1
Subfamily PLICATULINAE.		
Plicatula Lamarck	4	
Family DIMYIDAE.		
Dimya Rouault	1	
Order EULAMELLIBRANCHIA.		
Family LIMIDAE.		
Lima Cuvier	11	3

Families and Genera	No. of species and varieties collected by the "Siboga" Expedition	No. of new species and varieties
Family OSTREIDAE.		
Ostrea Linn.	3	
Family PINNIDAE.		
Pinna Linn.	6	
Family CRASSATELLIDAE.		
Crassatella Lamarck	3	
Family CARDITIDAE.		
Cardita Bruguière	8	1
Family TRAPEZIIDAE.		
Glossocardia Stoliczka	1	1
Family ISOCARDIIDAE.		
Isocardia Lamarck	4	
Family VESICOMYIDAE.		
Vesicomya Dall	3	3
Family LUCINIDAE.		
Lucina Lamarck	1	
Codakia Scopoli	4	
Myrtea Turton	1	
Divaricella von Martens	2	
Dentilucina P. Fischer	7	5
Family UNGULINIDAE.		
Diplodonta Bronn	5	2
Family LEPTONIDAE.		
Kellia Turton	1 (young shells)	
Family GALEOMMATIDAE.		
Galeomma Turton	2	
Scintilla Deshayes	4	
Pythina Hinds	1	
Family MONTACUTIDAE.		
Montacuta Turton	4	3
Isoconcha Gen. nov.	1	1
Family GELOINIIDAE.		
Geloina Gray	3	
Batissa Gray	1	
Family TELLLINIDAE.		
Tellina Linn.	28	2
Macoma Leach	2	
Family SCROBICULARIIDAE.		
Semele Schumacher	2	
Abra Lamarck	4	3
Theora H. & A. Adams	1	
Family DONACIDAE.		
Donax Linn.	2	
Family MESODESMATIDAE.		
Mesodesma Deshayes	2	

Families and Genera	No. of species and varieties collected by the "Siboga" Expedition	No. of new species and varieties
Family MACTRIDAE.		
Mactra Linn.	6	
Subfamily LUTRARIINAE.		
Lutraria Lamarck	1	
Family VENERIDAE.		
Meretrix Lamarck	1	
Macrocallista Meek	2	
Hysteroconcha P. Fischer	2	1
Lioconcha Mörch	2	
Pitar Römer	3	
Circe Schumacher	4	
Gafrarium Röding	4	
Paphia Röding	9	
Dosinia Scopoli	5	
Antigona Schumacher	4	
Chione Megerle	10	1
Anomalocardia Schumacher	1	
Clementia Gray	1	
Venerupis Lamarck	1	
Family PETRICOLIDAE.		
Petricola Lamarck	1	
Family CARDIIDAE.		
Cardium Linn.	24	3 (This includes a new name, which has been suggested for the preoccupied *Cardium rigidum* Reeve).
Corculum Röding	3	
Lunulicardia Gray	1	
Family TANCREDIIDAE.		
Hemidonax Mörch	1	
Family TRIDACNIDAE.		
Tridacna Lamarck	3	
Hippopus Lamarck	1	
Family CHAMIDAE.		
Chama Linn.	3	
Family GARIIDAE.		
Gari Schumacher	10	2
Asaphis Modeer.	1	
Family ALOIDIIDAE.		
Aloidis Megerle	6	
Family SOLENIDAE.		
Solecurtus Blainville	1	
Cultellus Schumacher	2	
Family SAXICAVIDAE.		
Saxicava Fleurian de Bellevue	1	

Families and Genera	No. of species and varieties collected by the "Siboga" Expedition	No. of new species and varieties
Family GASTROCHAENIDAE.		
Rocellaria Blainville	2	
Family PHOLADIDAE.		
Xylophaga Turton	1	1
Pholadidea Godall	1 (unidentifiable)	
Martesia Blainville	1	
Family TEREDINIDAE.		
Teredo Linn.	3	
Family LATERNULIDAE.		
Laternula Röding	2	
Family MYOCHAMIDAE.		
Myadora Gray	1	1
Family CALOPODIIDAE.		
Calopodium Röding	2	1
Family VERTICORDIIDAE.		
Verticordia Sowerby	3	2
Lyonsiella M. Sars	2	2
Order SEPTIBRANCHIA.		
Family POROMYACIDAE.		
Poromya Forbes	4	4
Family CUSPIDARIIDAE.		
Cuspidaria Nardo	15	11
Myonera Dall & Smith.	1	1
Total	412	90

From the above analytical table it would be seen that in the "Siboga" collection in addition to a number of forms which, owing to the unsatisfactory nature of the material, could not be identified specifically, 412 species and varieties of Pelecypods were identified. Of these the following 90 forms are described as new:

Nucula (Nucula) rugifera sp. nov.
Nucula (Nucula) diaphana sp. nov.
Nucula (Nucula) exodonta sp. nov.
Nucula (Nucula) bathybia sp. nov.
Nucula (Nucula) pachydonta sp. nov.
Nucula (Nucula) nimbosa sp. nov.
Nucula (Nucula) dautzenbergi sp. nov.
Nuculana (Nuculana) sibogai sp. nov.
Nuculana (Nuculana) robsoni nom. nov.
Nuculana (Nuculana) procumbens sp. nov.
Nuculana (Nuculana) bathybia sp. nov.
Nuculana (Nuculana) approximans sp. nov.
Nuculana (Thestyleda) modica sp. nov.
Nuculana (Thestyleda) scalata sp. nov.
Nuculana (Thestyleda) elaborata sp. nov.
Nuculana (Poroleda) parallelodonta sp. nov.
Nuculana (Poroleda) sibogaensis sp. nov.
Nuculana (? Ledella) discrepans sp. nov.
Malletia erronea sp. nov.
Malletia encrypta sp. nov.
Malletia humilior sp. nov.
Malletia tripartita sp. nov.
Neilonella dubia sp. nov.
Neilonella schepmani sp. nov.

Neilonella weberi sp. nov.
Neilonella delicatula sp. nov.
Arca (Barbatia) weberi sp. nov.
Arca (Bathyarca) sibogai sp. nov.
Limopsis dautzenbergi sp. nov.
Glycymeris dautzenbergi sp. nov
Modiolus (Modiolus) dubius sp. nov.
Solamen sibogæ sp. nov.
Pteria triangularis sp. nov.
Pteria tomlini sp. nov.
Pteria sibogæ sp. nov.
Spondylus serraticosta sp. nov.
Lima (Lima) tomlini sp. nov.
Lima (Limaria) fenestrata sp. nov.
Lima (Limatula) sibogai sp. nov.
Cardita (Venericardia) pelseneeri sp. nov.
Glossocardia stoliczkana sp. nov.
Vesicomya solidissima sp. nov.
Vesicomya compressa sp. nov.
Vesicomya winckworthi sp. nov.
Dentilucina (Dentilucina) inanis sp. nov.
Dentilucina (Callucina) flabelliformis sp. nov.
Dentilucina (Bellucina) macassari sp. nov.
Dentilucina (Bellucina) hedleyi sp. nov.
Dentilucina (Bellucina) hedleyi var. *quadrata* nov.
Diplodonta lamyi sp. nov.
Diplodonta dubia sp. nov.
Montacuta smithi sp. nov.
Montacuta pelseneeri sp. nov.
Montacuta (Mysella) sibogai sp. nov.
Isoconcha sibogai gen. et sp. nov.
Tellina (Tellina) patagiata sp. nov.
Tellina (Peronidia) macassariensis sp. nov.
Abra sibogai sp. nov.
Abra inanis sp. nov.
Abra weberi sp. nov.
Hysteroconcha (? Lamelliconcha) dautzenbergi sp. nov.
Chione (Timoclea) crassisquamata sp. nov.
Cardium (Trachycardium) sewelli sp. nov.
Cardium (Trachycardium) beauforti sp nov.
Cardium (Ctenocardia) translatum nom. nov.
Gari (Gari) schepmani sp. nov.
Gari (Gari) sibogai sp. nov.
Xylophaga tomlini sp. nov.
Myadora weberi sp. nov.
Calopodium (Kennerlia) carinatum sp. nov.
Verticordia (Verticordia) crebrilirata sp. nov.
Verticordia (?) *expansa* sp. nov.
Lyonsiella pilula sp. nov.
Lyonsiella smithi sp. nov.
Poromya (Poromya) pergranosa sp. nov.
Poromya (Cetoconcha) gloriosa sp. nov.
Poromya (Cetoconcha) eximia sp. nov.
Poromya (Cetoconcha) butoni sp. nov.
Cuspidaria (Cuspidaria) mitis sp. nov.
Cuspidaria (Cuspidaria) convexa sp. nov.
Cuspidaria (Cuspidaria) gigantea sp. nov.
Cuspidaria (Cuspidaria) corrugata sp. nov.
Cuspidaria (Cuspidaria) tomlini sp. nov.
Cuspidaria (Cuspidaria) solidula sp. nov.
Cuspidaria (Cardiomya) sibogai sp. nov.
Cuspidaria (Cardiomya) persculpta sp. nov.
Cuspidaria (Cardiomya) multicarinata sp. nov.
Cuspidaria (Cardiomya) semicostata sp. nov.
Cuspidaria (Rhinoclama) dubia sp. nov.
Myonera dautzenbergi sp. nov.

The presence of such a large number of new forms is to be explained by the fact that most of them are the result of deep-sea dredgings in an area hitherto almost unexplored. The majority of these forms belong to the families Nuculidæ, Nuculanidæ, Limidæ, Vesicomyidæ, Lucinidæ, Montacutidæ, Verticordiidæ, Poromyacidæ and Cuspidariidæ. Our knowledge of the deep-sea forms of most of these families is still far from complete, and further work in the Indo-Pacific Region is sure to result in the discovery of many new forms. The species discovered by the "Siboga" Expedition exhibit close relationships either with the forms already known from the Indo-Pacific or with species from the adjacent Australian Region. The remainder of the collection consists of the widely distributed Indo-Pacific species, and these do not call for any special remarks.

I have here to record my great indebtedness to my chief Lt.-Col. R. B. Seymour Sewell, Director, Zoological Survey of India, for permission to undertake this work. I have also to thank Dr. W. T. Calman, Keeper of Zoology, British Museum (Natural History), London, and Mr. G. C. Robson, Deputy Keeper and Incharge of Molluscs in the same Institution for special facilities for work and comparing of the "Siboga" material with the very rich collections stored in the British Museum. My grateful thanks are also due to the Library Staff of the British Museum for their unfailing kindness in acceding to my numerous demands at all times. Mr. J. R. le B. Tomlin and Mr. R. C. Winckworth also assisted me in various ways, and were ever ready to help me with material and information from their private collections. Finally I have to thank Professor Max Weber, the leader of the "Siboga" Expedition for entrusting this valuable collection to me for study, for his continued interest in the progress of the work, for his very valuable suggestions in connection with the preparation of the report and above all for seeing the work through the press.

Order PROTOBRANCHIA.

Family Nuculidae.

Genus **Nucula** Lamarck.

1799. *Nucula* Lamarck, Mem. Soc. Hist. Nat. Paris, p. 87.
1857. *Nucula* Adams, H. & A., Gen. Rec. Moll., II, p. 544.
1860. *Nucula* Hanley in Sowerby, Thes. Conch., III, p. 147.
1886. *Nucula* Fischer, P., Man. Conchyliol., p. 982.
1898. *Nucula* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 571.
1925. *Nucula* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 13.

I cannot agree with Dall that *Nuculana* Link is a synonym of *Nucula* Lamarck. On the other hand, as Iredale [1]) remarked *Leda* Schumacher is a substitute name for *Nucula* Lamarck, even though the type-species cited by Schumacher is not a *Nucula*, as this genus is now restricted.

Good descriptions of the genus are given by Hanley, Fischer and Woodring. The genotype, by monotypy, is *Nucula nucleus* (Linn.) and Children's designation [2]) of *Nucula rostrata* which is the type of *Nuculana* Link does not effect the status of the genera.

In the "Siboga" collection in addition to several already known and new species described in this report for the first time, there is a representative of the subgenus *Acila* H. & A. Adams [3]). Stoliczka [4]) designated *N.* (*A.*) *divaricata* Hinds as the type of this subgenus.

1. *Nucula* (*Nucula*) *superba* Hedley.

1860. *Nucula obliqua* Hanley (nec Lamarck), in Sowerby Thes. Conch., III, p. 156, pl. CCXXX, fig. 150.
1870. *Nucula obliqua* Sowerby, Conch. Icon., XVIII, *Nucula*, pl. II, fig. 14.
1885. *Nucula obliqua* Smith, "Challenger" Lamellibranchia, p. 225.
1896. *Nucula Tennisoni* Pritchard, Proc. Roy. Soc. Victoria, VIII, p. 128.
1899. *Nucula obliqua* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 188.
1901. *Nucula obliqua* Tate & May, Proc. Linn. Soc. N. S. Wales, XXVI, p. 435.
1902. *Nucula superba* Hedley, Mem. Austral. Mus., IV, p. 292.
1910. *Nucula superba* Hedley, Austral. Ass. Adv. Sci. XII, p. 343.
1912. *Nucula superba* Hedley, Rec. Austral. Mus., VIII, p. 131, pl. XI, fig. 12.

As Hedley rightly remarked, the species recorded by Hanley and Smith under the

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1) Iredale, T. — Trans. New Zealand Inst., V, p. 483 (1915).
2) Children, J. G. — Quart. Journ. Sci. Lit. Arts, XIV, p. 320 (1823).
3) Adams, H. & A. — Gen. Rec. Moll., II, p. 545 (1858).
4) Stoliczka, F. — Cretaceous Faun. S. India, Pelecypods, p. 325 (1870).

name *N. obliqua* is distinct from the Lamarckian species of this name. This new species for which he proposed the name *N. superba* is a northern species, and is distinguished by its very solid shell, which is proportionately longer than high, has a finely crenulated margin, and in having a slight but constant inflexion of the dorsal margin just anterior to the long row of teeth. In addition to the above distinctions pointed out by HEDLEY, it may be noted that the posterior border of the shell of *N. superba* descends very obliquely and as a result the shell is much more oblique than in the true *N. obliqua*.

Distribution: — *N.* (*N.*) *superba* is, according to HEDLEY, the common species of the genus off the coast of Queensland at a depth of about 20 fathoms. It has also been recorded from near New Guinea, Arafura Sea and the Torres Straits.

The "Siboga" Expedition dredged from a depth of 29 metres a beautiful specimen, 20.5 mm. long, at Anchorage near Seget, west entrance of Selee (Galewo) Strait (St 163).

2. *Nucula* (*Nucula*) *cumingii* Hinds.

1843. *Nucula Cumingii* Hinds, Proc. Zool. Soc. London, p. 97.
1844. *Nucula Cumingii* Hinds, Voyage "Sulphur", p. 62, pl. XVIII, fig. 1.
1845. *Nucula Cumingii* Catlow & Reeve, Conch. Nomencl., p. 53.
1858. *Nucula Cumingii* Adams, H. & A., Gen. Rec. Moll., II, p. 545.
1860. *Nucula Cumingii* Hanley in Sowerby Thes. Conch., III, p. 157, pl. CCXXIX, fig. 117.
1860. *Nucula Cumingii* Reeve, Elem. Conch., II, p. 96.
1870. *Nucula Cumingii* Sowerby, Conch. Icon., XVIII, *Nucula*, pl. I, fig. 5.
1890. *Nucula Cumingii* and *N. Loringi* Paetel, Cat. Conch. Samm., III, p. 221.
1896. *Nucula Cumingii* Casto de Elera. Cat. Sist. Filip., p. 806.
1905. *Nucula Cumingii* Hidalgo, Cat. Filip., p. 376.
1909. *Nucula Cumingii* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 103.
1910. *Nucula loringi* Hedley, Austral. Ass. Adv. Sci., XII, p. 343.
1913. *Nucula loringi* and *N. Cumingii* Hedley, Proc. Linn. Soc. N. S. Wales, XXXVII, p. 264.

Nucula (*Nucula*) *cumingii* is a large but thin shelled species. The surface of the shell is smooth, except in full grown shells, which near the ventral margins show a number of concentric rings of growth.

Distribution: — *N.* (*N.*) *cumingii* has been recorded from the Malacca Straits, Singapore, Gulf of Siam, Strait of Macassar, New Guinea, the Philippines and Australian waters.

The "Siboga" Expedition trawled specimens at St. 87 (0° 32′ S., 119° 39′.8 E., 655 metres), St. 88 (0° 34′.6 N., 119° 8′.5 E, 1301 metres), St. 254 (5° 40′ S., 132° 26′ E., 310 metres) and St. 300 (10° 48′.6 S., 123° 23′.1 E., 918 metres), and dredged single specimens at Anchorage near Seget, west entrance of Selee (Galewo) Strait (St. 163) and Anchorage off Atjatuning, west coast of New Guinea (St. 169).

3. *Nucula* (*Nucula*) *donaciformis* Smith.

1895. *Nucula donaciformis* Smith, Ann. Mag. Nat. Hist., (6) XVI, p. 15, pl. II, fig. 8.
1897. *Nucula donaciformis*, Illustr. Zool. R. I. M. S. "Investigator", Moll., pl. I, figs. 5, 5*a*—*c*.

SMITH's description of *N.* (*N.*) *donaciformis* is very complete, and needs no further elaboration. It may, however, be noted that older shells have their ventral margin slightly more arched than is shown in Smith's figures. The measurements of the largest specimen obtained by the "Investigator" were 15 mm. × 11 mm. × 7.5 mm., while those of the largest shell obtained by the "Siboga" Expedition are: — 18 mm. × 15 mm. × 9.8 mm.

Distribution: — The types of *N.* (*N.*) *donaciformis* were collected at St. 165 in the Arabian Sea off the Coromandel Coast from a depth of 145—250 fathoms.

The "Siboga" Expedition obtained several specimens from St. 27 (8° 43′.5 S., 115′21.5 E., 210 metres), St. 87 (0° 32′. S., 119° 39′.8 E., 655 metres), and St. 178 (2° 40′ S., 128° 37.5 E., 835 metres).

4. *Nucula* (*Nucula*) *rugifera* sp. nov. (Plate I, figs. 1, 2).

The following is a description of this new species: — Shell small obliquely wedge-shaped, inequilateral; solid, slightly inflated; escutcheon greatly depressed, cordate; apex obtuse, umbones, moderately tumid; anterior side nearly straight, posterior angulate, anterior end subtruncate; sculpture consisting of fine concentric rugae and about 10 much stronger transverse ridges on the anterior slope, hinge-plate narrow, teeth strong, anterior series consisting of 16, posterior of 6 teeth, anterior series almost straight, posterior distinctly arched. Shell of a dirty yellow colour, nacre dull pearly white.

Measurements: — Length 5 mm.: height 3.8 mm.; diameter 2.5 mm.

Habitat: — A single specimen, the Holotype of the species, was brought up in a deep-sea trawl at St. 173 (3° 27′.0 S., 131° 0′.5 E., 567 metres).

Remarks: — The shape and transverse ridges on the anterior slope of the shell are characteristic of *N.* (*N.*) *rugifera.*

5. *Nucula* (*Nucula*) *diaphana* sp. nov. (Plate I, figs. 3, 4).

The following is a description of this new species: — Shell medium sized, ovate, subacuminate at both ends, inequilateral, ventricose, thin; escutcheon concave, narrowly cordate; umbones acute, tumid, prominent, curved inwards and approximating in middle line; anterior side longer and more arched than posterior; sculpture consisting of concentric very fine, microscopic striae and a number of more impressed lines of growth; hinge-plate strongly developed consisting of closely packed teeth, anterior series with 11, posterior with 7 teeth, both series only slightly arched. Shell of light horn-yellow colour, transluscent, nacre pearl white, iridescent.

Measurements (in millimetres):

	Holotype	Paratype
Length	8	7.4
Height	6	5.7
Diameter	4.5	4.2

Habitat: — Three specimens of this interesting species were brought up in a trawl at St. 52 (9° 3′.4 S., 119° 56′.7 E., 959 metres).

Remarks: — *Nucula* (*Nucula*) *diaphana* resembles *N.* (*N.*) *cumingii* Hinds, but the strong hinge and the very thin shell of the former distinguish it without any difficulty from the latter.

6. *Nucula* (*Nucula*) *exodonta* sp. nov. (Plate I, figs. 5, 6).

The following is a description of this new species: — Shell small, trigonal, subequilateral, moderately, inflated, thin, escutcheon depressed, small, subcordate; obtuse, formed by incurved umbones, anterior edge somewhat curved running gradually into obliquely truncate end; posteriorly subangulate; ventral margin distinctly arched; sculpture consisting of sharp concentric rugae just visible to naked eye; hinge for size of shell heavy, anterior series consisting of 11 teeth, almost in straight line, posterior series slightly arched formed by 7 teeth; lower inner margins of valves smooth. Shell of a light horny colour; nacre white iridescent.

Measurements: — Length 4.7 mm., height 3.5 mm., diameter 2.6 mm.

Habitat: — A single specimen, the Holotype of the species, was trawled at St. 300 (10° 48′.6 S., 123° 23′.1 E., 918 metres).

Remarks: — *Nucula* (*Nucula*) *exodonta* is a beautiful species, and is easily recognised by its form and sculpture.

7. *Nucula* (*Nucula*) *bathybia* sp. nov. (Plate I, figs. 7, 8).

The following is a description of this new species: — Shell medium sized, obliquely ovate, inequilateral, thin, subcompressed; escutcheon slightly depressed, narrowly triangular; apex obtuse; umbones slightly tumid, curved inwards and backwards; anterior side much longer than posterior, convex, narrowly rounded towards very arched basal margin; posterior side much shorter, slightly curved; posterior end broadly rounded; sculpture consisting of microscopic concentric sulcations; hinge-plate narrow, teeth moderately strong, anterior series consisting of 12, posterior of 6 teeth, both series almost straight. Shell of a light yellow colour, nacre pearly, iridescent.

Measurements (in millimetres):

	Holotype	
Length	8	6.5
Height	6.1	5.4
Diameter	4	1.8 (single right valve).

Habitat: One complete shell, the Holotype of the species, and three odd valves were brought up in a deep sea trawl at St. 208 (5° 39′ S., 122° 12′ E., 1886 metres).

Remarks: — *Nucula* (*Nucula*) *bathybia* is allied to *N.* (*N.*) *strangei* A. ADAMS[1] but its shape, sculpture and hinge offer good distinguishing characters.

8. *Nucula* (*Nucula*) *pachydonta* sp. nov. (Plate I, figs. 9, 10).

The following is a description of this new species: — Shell small, trigonal-elliptical, very inequilateral, ventricose, thick, solid; escutcheon area only slightly concave; umbones very tumid, prominent, curved backwards and inwards, hardly meeting in middle line; anterior side sloping, very convex, broadly curving towards slightly arched basal margin; posterior side much shorter, acuminated below; sculpture consisting of very minute, regular concentric striae; hinge-plate strong, broad, strongest teeth near outer end of anterior series; anterior series consisting of 11, posterior of 6 teeth, both series only slightly arched. Shell of light brownish-yellow colour, nacre dirty pearl white.

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[1] ADAMS, A. — Proc. Zool. Soc. London, (Vol. for 1856), p. 52 (1856).

Measurements of Holotype: — Length 5.4 mm., height 4 mm., diameter 2.5 mm.

Habitat: — The Holotype and a right valve were brought up in a trawl at St. 178 (2° 40′ S., 128° 37′.5 E., 835 metres).

Remarks: — The solid and thick shell of a trigonal elliptical shape and very strong hinge are characteristic of *N.* (*N.*) *pachydonta*.

9. *Nucula* (*Nucula*) *nimbosa* sp. nov. (Plate I, figs. 11, 12).

The following is a description of this new species: — Shell small, trigonal, inequilateral, ventricose, thin; escutcheon not very greatly depressed, subcordate; apex acute, umbones slightly tumid, curved inwards and backwards, almost approximating in middle line; anterior side sloping, lightly convex, acutely rounded towards the arched basal margin; posterior side shorter, forming an acute angle with the basal margin; sculpture consisting of fine concentric rugae and microscopic radial lines; hinge-plate weak, teeth moderately strong, anterior series consisting of 8, posterior of 5 teeth, both series slightly arched. Shell of light yellow colour, nacre dull pearly white.

Measurements of the Holotype: — Length 3.2 mm., height 2.8 mm., diameter 1.7 mm.

Habitat: — A single shell of this interesting species was trawled at St. 211 (5° 40′.7 S., 120° 45′.5 E., 1158 metres).

Remarks: — The characteristic trigonal form and the weak hinge-plate, consisting of few teeth in both series, distinguish *N.* (*N.*) *nimbosa* from the other allied species.

10. *Nucula* (*Nucula*) *dautzenbergi* sp. nov. (Plate I, figs. 13—16).

The following is a description of this new species: — Shell medium sized, obliquely ovate, very inequilateral, subcompressed; escutcheon area moderately depressed, narrowly heart-shaped; umbones acute, not very tumid, hardly prominent, curved inwards and backwards; posterior side much shorter than anterior, nearly straight, anterior very convex; ventral margin arched; sculpture consisting of regular, concentric, minute striae; hinge-plate moderately strong, anterior series with 14, posterior with 7 teeth, both series slightly arched. Shells of a brownish yellow colour, but greater part of shells bleached whitish and without periostracum, nacre shining white.

Measurements: — Length 10.4 mm., height 8.8 mm., diameter 4.5 mm.

Habitat: — The Holotype and a left valve were dredged at St. 59 (Western Entrance, Samau Strait, 390 metres) and a younger shell at St. 52 (9° 3′.4 S., 119° 56′.7 E., 959 metres).

Remarks: — This species, which I have associated with the name of the famous French Conchologist, Monsieur P. Dautzenberg, bears a superficial resemblance to *N.* (*N.*) *obliqua* Lam., but the new species is easily separated by its distinctive hinge structure and its fine sculpture.

11. *Nucula* (*Acila*) *mirabilis* Adams & Reeve.

1850. *Nucula mirabilis* Adams & Reeve, "Samarang" Moll., p. 75, pl. XXI, fig. 8.
1858. *Nucula* (*Acila*) *mirabilis* Adams, H. & A., Gen. Rec. Moll., p. 545.

1860. *Nucula mirabilis* Reeve, Elem. Conch., II, p. 96.
1860. *Nucula mirabilis* Hanley in Sowerby Thes. Conch., III, p. 155, pl. CCXXIX, fig. 114.
1870. *Nucula mirabilis* Sowerby, Conch. Icon., XVIII, *Nucula*, pl. 1, fig. 4.
1882. *Nucula mirabilis* Dunker, Ind. Moll. Mar. Japon., p. 238.
1885. *Nucula* (*Acila*) *mirabilis* Smith, "Challenger" *Lamellibranchia*, p. 230.
1890. *Nucula* (*Acila*) *mirabilis*, Paetel, Cat. Conch. Samm., III, p. 222.
1895. *Nucula* (*Acila*) *mirabilis* Pilsbry, Cat. Mar. Moll. Japan, p. 151.
1906. *Nucula mirabilis* Owston, Japan. Loochooan Shells, p. 32.

The shell, which I refer to *N.* (*A.*) *mirabilis* agrees with Japanese shells of this species in every respect. The measurements of this shell are: — Length 24.2 mm.; height 18.4 mm.; diameter 11 mm.

Distribution: — *N.* (*A.*) *mirabilis* has so far been recorded from the Japanese waters only.

The "Siboga" Expedition brought up a single shell of this species in a deep-sea trawl at St. 18 (7° 28′.2 S., 115° 24′.6 E., 1018 metres).

Remarks: — Dall [1]) has suggested combining *N. divaricata* Hinds, *N. mirabilis* Adams & Reeve, *N. insignis* Gould and *N. fultoni* Smith. He considers the differences between the various forms to be only of the nature of racial characteristics of the different forms found in the adjacent areas of the Indo-Pacific Region. The material at my disposal is, however, very limited to be able to offer any definite opinion on this question.

Family Nuculanidae.

Subfamily Nuculaninae.

Genus **Nuculana** Link.

1807. *Nuculana* Link, Beschreib. Nat. Samm. Univ. Rostock, p. 155.
1858. *Leda* Adams, H. & A. (nec Schumacher), Gen. Rec. Moll., II, p. 546.
1860. *Leda* Hanley (nec Schumacher) in Sowerby, Thes. Conch., III, p. 106.
1871. *Laeda* (sic), Sowerby (nec Schumacher) in Reeve, Conch. Icon., XVIII, *Laeda* (sic) pl. I (explanation).
1886. *Leda* Fischer (nec Schumacher), Man. Conchyliol., p. 985.
1898. *Leda* Dall (nec Schumacher), Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 579.
1925. *Leda* Woodring (nec Schumacher), Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 15.
1930. *Nuculana* Stewart, Special Publication Philadelphia Acad. Nat. Sci., N⁰ 3, p. 48.

As I remarked in my notes on the genus *Nucula* (antea p. 1), Schumacher's generic name *Leda* was only a substitute name for the Lamarckian genus *Nucula*, and the name *Nuculana* Link must, therefore, be adopted for the genus which most authors have been designating as *Leda* Schumacher.

Stewart (op. cit.), has ably discussed the question of the type of the genus, and I agree with him that *Nuculana pernula* (O. F. Müller) based on the Chemnitzian figure "Conch-Cab.", V, p. 7, pl. LV, figs. 550, 551 (1784) is the genotype.

A large number of new genera of this family have been set up recently by Iredale, but beyond selecting their genotypes he has not published the description of any of them, and but

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1) Dall, W. H. — Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 572 (1895).

for my having had the advantage of working in the British Museum (Nat. Hist.), London, where most of the genotypes are represented, it would not have been possible to understand the exact generic limitations of these new genera.

In the "Siboga" collection the family Nuculanidae is represented by the two subfamilies Nuculaninae and Malletiinae. The former family is represented by the Genera *Nuculana* Link and *Yoldia* Möller in this collection. Most of Iredale's new genera of the family Nuculanidae are based on groups of slightly varying species of the genus Nuculana, and in the following account I treat them as subgenera of *Nuculana*. The species of *Nuculana* in the collection are referred to the genus *Nuculana*, s. s.-type *Nuculana* (*Nuculana*) *pernula* (O. F. Müller), and the subgenera *Megaleda* Iredale [1]) — type *Nuculana* (*Megaleda*) *inopinata* (Smith), *Thestyleda* Iredale [2]) — type *Nuculana* (*Thestyleda*) *ramsayi* (Smith), *Poroleda* Tate [3]) — type *Nuculana* (*Poroleda*) *lanceolata* Tate, and *Ledella* Verrill and Bush [4]) — type *Nuculana* (*Ledella*) *messanensis* (Seg.).

1. *Nuculana* (*Nuculana*) *confusa* (Hanley).

1833. *Nucula Pella* Sowerby (non Linn.), Conch. Illustr. Cat. *Nuculae*, p. 3, fig. 6.
1860. *Leda Confusa* Hanley in Sowerby Thes. Conch., III, p. 119, pl. CCXXVIII, fig. 85.
1871. *Laeda confusa* Sowerby in Reeve Conch. Icon., XVIII, pl. V, fig. 24bis.
1882. *Leda confusa* Dunker, Ind. Moll. Mar. Japon., p. 338.
1884. *Leda confusa* Grasset, Ind. Test. Viv., p. 294.
1890. *Leda confusa* Paetel, Cat. Conch. Samm., III, p. 223.
1906. *Leda confusa* Owston, Japan. Loochooan Shells, p. 32.

The "Siboga" specimens, which I refer to *N.* (*N.*) *confusa* agree in all respects with specimens from the China Sea in the British Museum (Natural History), London.

Distribution: — Sowerby gives "Japan and China Seas" as the range of this species.

The "Siboga" collected shells in the Bay of Nangamessi, Sumba (St. 53, up to 36 metres), in Kambaragi Bay, Tanah Djampeah (St. 64) and in Macassar Strait and surroundings (St. 71).

2. *Nuculana* (*Nuculana*) *sibogai* sp. nov. (Plate I, figs. 17, 18).

The species is closely allied to *N.* (*N.*) *confusa* (Hanley) [5]), but is easily distinguished by its shell being much more inflated, the more pointed rostrum, both series of the hinge-plate more arched and more extensive, and the sculpture consisting of finer striae.

Measurements of the Holotype: from St. 178: — Length 14.5 mm., height 8.5 mm., diameter 6 mm.

Habitat: — The "Siboga" Expedition trawled a good series of this species from St. 52 (9° 3′.4 S., 119° 56′.7 E., 959 metres), St. 156 (0° 29′.2 S., 130° 5′.3 E., 469 metres), St. 178 (2° 40′ S., 128° 37′.5 E., 835 metres) and St. 300 (10° 48′.6 S., 123° 23′.1 E., 918 metres).

Remarks: — *N.* (*N.*) *sibogai* is a deep-sea form as all the specimens of the species were obtained at dephts above 450 metres.

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1) Iredale, T. — Rec. Austral. Mus., XVII, p. 158 (1929).
2) Iredale, T. — ibid, p. 158 (1929).
3) Tate, R. — Journ. Proc. Roy. Soc. N. S. Wales, XXVII, p. 186 (1894).
4) Verrill, A. E. and Bush, K. J., Amer. Journ. Sci., (4) III, p. 54 (1897).
5) See Sowerby, G. J. — In Reeve Conch. Icon., XVIII, *Laeda*, pl. V, fig. 24bis (1871).

3. *Nuculana* (*Nuculana*) *robsoni* nom. nov. (Plate I, figs. 19, 20).

1871. *Laeda acuminata* Sowerby (nec Buch) in Reeve Conch. Icon. XVIII, *Laeda*, pl. VIII, fig. 50.

Leda acuminata is preoccupied by Buch [1]) in 1833, and I, therefore, propose to associate Sowerby's species with the name of my friend Mr. G. C. Robson of the British Museum (Nat. Hist.), London, as a small return for the many favours extended to me during the time I was working in the British Museum.

The very peculiar shape, the very regular sculpture of the shells and the strongly developed hinge consisting of about 20 closely placed teeth on each side are characteristic of the species.

Distribution: — The types of the species in Museum Taylor were without any habitat.

The "Siboga" Expedition collected a good series of shells from a depth of 9 metres at the Anchorage off Djangkar, Java (St. 4).

4. *Nuculana* (*Nuculana*) *procumbens* sp. nov. (Plate I, figs. 21, 22).

The following is a description of this new species: — Shell small, ovately trigonal, with numerous thick concentric ribs narrower than interstices; with a sinuous elevated ridge running from umbo to pointed rostrum behind; somewhat acuminate anteriorly, with a shallow groove running alongside lunule to ventral margin near anterior angle; umbones elevated, rounded, not approximating in middle, lunule shallow, escutcheon almost rhomboidal, narrow, concave; ventral margin greatly arched; hinge-plate well developed, anterior series with 12, posterior with 10 teeth. Shell of a pale straw colour, nacre shining white.

Measurements of Holotype: — Length 5.8 mm., height 3.9 mm., diameter 6 mm.

Habitat: — A single shell of this interesting species was brought up in a deep sea trawl at St. 211 (5° 40'.7 S., 120° 45'.5 E., 1158 metres).

Remarks: *Nuculana* (*Nuculana*) *procumbens* resembles *N.* (*N.*) *reticulata* (Hinds) [2]) from the Philippines, but the sculpture of the two species is quite different.

5. *Nuculana* (*Nuculana*) *bathybia* sp. nov. (Plate I, figs. 23, 24).

The following is a description of this new species: — Shell small, subovate with numerous, fine, subconcentric striae covering the surface; ridge from umbo to rostrum only slightly marked; umbones elevated, angulated; anteriorly acuminately rounded, without definite groove from lunule to ventral margin, posteriorly narrowly angulate; lunule shallow, escutcheon narrow, deeply concave; ventral margin slightly arched; hinge-plate well developed, with subequal teeth in both anterior and posterior series. Shell of a dirty straw colour, nacre shining greenish white.

Measurements of Holotype: — Length 6.4 mm., height 4 mm.; diameter 2.8 mm.

Habitat: — A single shell of *N.* (*N.*) *bathybia* was dredged at St. 178 (2° 40' S., 128° 37'.5 E.; 835 metres).

Remarks: — This species is easily distinguished by its form, very regular sculpture and hinge teeth.

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1) Buch, C. L. von — In Zieten Petref. Würtemberg, X, p. 77, (1833).

2) See Sowerby, G. J. — in Reeve Conch. Icon. XVIII, *Laeda*, pl. VIII, fig. 48 (1871).

6. *Nuculana* (*Nuculana*) *approximans* sp. nov. (Plate I, figs. 25, 26).

Shell resembling *N. ventricosa* (Hinds)[1]) from the Strait of Malacca, but less ventricose, more elongate, ventral margin less arched, umbones more tumid, lunule less excavated and the sculpture coarser.

Measurements of Holotype: — Length 16.5 mm., height 8.8 mm., diameter 6.4 mm.

Habitat: — The "Siboga" Expedition dredged a few specimens of *N.* (*N.*) *approximans* in the Western Entrance of the Samau Strait (St. 59, 390 metres) and a single shell at St. 159 0° 59′.1 S., 129° 48′.8 E., 411 metres).

Remarks: — I was at first inclined to consider the specimens described above as being those of *N.* (*N.*) *ventricosa* (Hinds), but after comparison with specimens of the latter in the British Museum, I am of opinion, that the "Siboga" shells are distinct.

7. *Nuculana* (*Magaleda*) *inopinata* (Smith).

1885. *Leda inopinata* Smith, "Challenger" Lamellibranchia., p. 236, pl. XIX, figs. 9, 9*a*.
1906. *Leda inopinata* Hedley, Rec. Austral. Mus., VI, p. 214.
1918. *Nuculana inopinata* Hedley, Journ. Roy. Soc. N. S. Wales, LI, Suppl., p. M. 4.
1929. *Magaleda inopinata* Iredale, Rec. Austral. Mus. XVII, p. 158.

This interesting species was described by SMITH under the name *Leda inopinata* from off Sydney, Australia in 950 fathoms. There are also in the British Museum (Nat. Hist.), London, specimens from off Sydney taken by the "Challenger" in 410 fathoms and others sent by Professor HASWELL from 800 fathoms.

IREDALE has recently separated this species into a distinct genus *Magaleda* but has not published any description of it. The general form of the shell is very similar to that of other species of the genus *Nuculana*, but the beak is short, the surface is covered "with numerous, slender, radiating lirae, some of which bifurcate towards the lower end", the lirae do not extend to the beak and there are on the shell a large number of concentric striae which make the general surface appear somewhat tessellated. The hinge is strongly developed, with 10 long, acute teeth on each side, the largest tooth is the fourth from the outer edge.

I have compared the "Siboga" shells with the type in the British Museum, and can find no differences between them.

Distribution: — The type of the species and other shells have so far been obtained off the coast of Sydney in depth of 410—950 fathoms.

The "Siboga" obtained specimens in deep-sea trawls at St. 88 (0° 34′.6 N., 119° 8′.5 E., 1301 metres), St. 211 (5° 40′.7 S., 120° 45′.5 E., 1158 metres) and St. 221 (6° 24′ S., 124° 39′ E., 2798 metres). These specimens greatly extend the range of the species.

8. *Nuculana* (*Thestyleda*) *modica* sp. nov. (Plate I, figs. 27—29).

The following is a description of this new species: — Shell of medium size, thin, very elongate, sharply rounded anteriorly, with very elongate beak posteriorly, margin of rostrum slightly curved; very inequilateral; acute almost smooth umbones lying in anterior third of total

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1) See SOWERBY, G. J. — in Reeve Conch. Icon., XVIII, *Laeda*. pl. V, fig. 30 (1871).

length; anterior dorsal slope short, almost straight, passing gradually into rounded anterior end; posterior slope very long, somewhat concave; ventral outline evenly curved to about middle, whence it curves up to form lower slightly concave margin of rostrum; sculpture consisting of very minute concentric striae over entire surface of valves, these turn sharply at right angles from the outer keel to the concave area of the escutcheon and two radiating ridges or keels, first running from umbo to upper angle of rostral extremity and second from umbo to lower angle; hinge-plate moderately strong, anterior plate lying short distance inwards from margin, posterior extending about two thirds of posterior dorsal slope; both plates with numerous close set, triangular teeth; a low, curved longitudinal internal ridge present in the rostral region. Shell of a pale straw colour, nacre white.

Measurements of Holotype: — Length 11.2 mm., maximum height 4.5 mm., diameter 3 mm.

Habitat: — The "Siboga" Expedition obtained a complete shell and a few valves of this interesting species at St. 52 (9° 3′.4 S., 119° 56′.7 E., 959 metres), St. 178 (2° 40′ S., 128° 37′.5 E., 835 metres) and St. 212 (5° 54′.5 S., 120° 19′.2 E., 462 metres).

Remarks: — *N.* (*T.*) *modica* is allied to *N.* (*T.*) *ramsayi* (Smith)[1]) from off Sydney, N. S. Wales. IREDALE[2]) has suggested this species as the type of his new genus *Thestyleda*, it is another example of a new genus being proposed without characterization.

9. *Nuculana* (*Thestyleda*) *scalata*, sp. nov. (Plate I, figs. 30, 31).

N. (*T.*) *scalata* is allied to *N.* (*T.*) *ramsayi* (Smith)[1]) and *N.* (*T.*) *modica* described above. From both these species, however, it is distinguished by its much larger size, its much thinner shell, the shell sculpture consisting of low, very distantly placed rugae, which become very pronounced and almost like ridges on the rostrum, and its comparatively feebly developed hinge teeth. The ridges on the upper edges of the rostrum are distinctly raised and give the shell a scaly appearance in this region.

Measurements: — Length 13 mm., maximum height 5 mm., diameter 2.5 mm.

Habitat: — A single specimen of this beautiful species was brought up in a deep-sea trawl at St. 300 (10° 48′.6 S., 123° 23.1 E., 918 metres).

10. *Nuculana* (*Thestyleda*) *elaborata*, sp. nov. (Plate I, figs. 32—34).

The following is a description of this new species: — Shell of medium size, thin, elongate, slightly tumid, acutely rounded anteriorly, with a narrow, elongate beak posteriorly, margin of rostrum almost straight; very inequilateral; acute, lightly sculptured umbones lying in anterior third of total length; anterior dorsal slope short; posterior slope more than twice as long, very concave in first half, then almost straight; sculpture consisting of very well marked, regular, concentric rugae, almost like ridges, over entire surface of shell, these turn sharply, almost at right angles from the outer keel upwards and are divided by a longitudinal groove externally to the second keel into somewhat deflected ridges; two radiating ridges forming keels and a longitudinal groove midway between keels; hinge-plate moderately strong, similar to that of

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1) SMITH, E. A. — "Challenger" Lamellibranchia, p. 241, pl. XX, figs. 3, 3*a* (1885).

2) IREDALE, T. — Rec. Austral. Mus., XVII, p. 158 (1929).

N. (*T.*) *ramsayi*, but teeth sharper and more closely placed; a low, curved, longitudinal internal ridge present. Shell of yellowish brown colour, nacre shining white.

Measurements of Holotype: — Length 7.5 mm., height 4 mm., diameter 2 mm.

Habitat: — The "Siboga" collection contains the Holotype and an odd valve brought up in a deep-sea trawl at St. 52 (9° 3′.4 S., 119° 56′.7 E., 959 metres).

Remarks: — *N.* (*T.*) *elaborata* is allied to *N.* (*T.*) *ramsayi* (Smith) and *N.* (*T.*) *modica* Prashad, but is distinguished from either by its form, sculpture and hinge.

11. *Nuculana* (*Poroleda*) *parallelodonta* sp. nov. (Plate I, figs. 35, 36, and Plate VIII, fig. 1,[2]).

The following is a description of this new species: — Shell medium sized, oblong, rostrate, thin, shining, translucent; rounded anteriorly, with a narrow elongate beak posteriorly; very inequilateral; distinct, slightly raised, acute umbones in anterior third of shell; anterior dorsal slope short; posterior more than twice as long, very concave, evenly arched; sculpture consisting of very low, almost microscopic concentric striae, with two obscure radial ribs and a shallow groove running in between; hinge-plate very weak, feebly developed, consisting of elongate, thin, lamellar teeth placed parallely and forming obtuse angles with shell margin, 7 in anterior and 4 in posterior part of hinge. Shell of light straw colour; nacre shining white.

Measurements of Holotype: — Length 13.3 mm., height 5.4 mm., diameter 2.4 mm.

Habitat: — The unique Holotype was dredged at St. 226 (5° 26′.7 S., 127° 36′.5 E., 1595 metres).

Remarks: — *N.* (*P.*) *parallelodonta* is allied to *N.* (*P.*) *spathula* (Hedley)[1]), but is distinguished by its much broader shape, less arched rostrum and more feebly developed hinge teeth.

12. *Nuculana* (*Poroleda*) *sibogaensis* sp. nov. (Plate I, fig. 37).

N. (*P.*) *sibogaensis* is represented by two slightly damaged left valves only, and I, therefore, refrain from giving a detailed description of the species. It is closely allied to *N.* (*P.*) *parallelodonta* Prashad described above, but is easily distinguished by its more elongate and spathulate valves, much thicker shell, less prominent umbones, and better developed hinge, which consists of 12 teeth in the anterior and 6 in the posterior part of the hinge. The sculpture is slightly more pronounced.

Measurements: — length 18.8 mm., height 6 mm., diameter 6 mm.

Habitat: — Two left valves of this interesting species were brought up in a deep-sea trawl at St. 178 (2° 40′ S., 128° 37′.5 E., 835 metres).

13. *Nuculana* (? *Ledella*) *discrepans* sp. nov. (Plate I, figs. 38, 39).

The following is a description of this new species: Shell small, thick, ovate, inequilateral, ornamented with very regular, thin, concentric striae, much narrower than interspaces; obtusely rounded anteriorly, slightly rostrate posteriorly, rostral area marked by a distinct groove running to ventral margin from near umbo; umbones somewhat tumid, prominent, turned inwards and

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1) Hedley, C. — Proc. Linn. Soc. N. S. Wales, XXXIX, p. 696, pl. LXXVIII, figs. 17, 18 (1915).

backwards; hinge-plate strong, with 12—14 teeth on both anterior and posterior series. Shell of a pale straw colour; nacre shining white.

Measurements of Holotype: — Length 6.1 mm., height 4.1 mm., diameter 3.7 mm.

Habitat: — a few specimens of *N.* (? *L.*) *discrepans* were dredged in Madura Bay in southern part of Molo Strait between depths of 69—91 metres (St. 51).

Remarks: — I have some hesitation in assigning this species to the subgenus *Ledella* Verrill and Bush [1]), which, as originally defined, appears to be a composite genus. It may, however, be restricted to small ovate, moderately swollen species with a short rostrum and having the shell smooth or evenly sculptured with low concentric ridges or striae. The type of *Ledella* is *N.* (*L.*) *messanensis* (Seg.) and it was proposed to replace the preoccupied name *Junonia* of Seguenza.

Genus **Yoldia** Möller.

1842. *Yoldia* Möller, Ind. Moll. Groenlandiae, p. 18.
1858. *Yoldia* Adams H. & A., Gen. Rec. Moll., II, p. 548.
1860. *Yoldia* Hanley, in Sowerby Thes. Conch., III, p. 106.
1871. *Yoldia* Sowerby, in Reeve Conch. Icon., XVIII, *Yoldia*, pl. I (explanation).
1886. *Yoldia* Fischer, P., Man. Conchyliol., p. 986.
1897. *Yoldia* Verrill & Bush, Amer. Journ. Sci., (4) III, p. 55.
1898. *Yoldia* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 594.
1925. *Yoldia* Woodring, Miocene Molluscs from Bowden, Jamaica, *Pelecypods* etc., p. 21.
1930. *Yoldia* Stewart, Special Publication Philadelphia Acad. Nat. Sci., № 3. p. 59.

STEWART has fully discussed the question of the genotype of *Yoldia* in the work cited above, and I agree with him that there can be no question about the type being *Yoldia arctica* Möller = *Y. hyperborea* (Gould).

The subgeneric divisions of *Yoldia* suggested by VERRILL & BUSH and others are not satisfactory and I, therefore, propose leaving these out of consideration in the following account.

1. *Yoldia lepidula* A. Adams.

1856. *Yoldia lepidula* Adams, A., Proc. Zool. Soc. London, p. 50.
1858. *Yoldia lepidula* Adams, H. & A., Gen. Rec. Moll., p. 548.
1860. *Leda lepidula* Hanley in Sowerby Thes. Conch., III, p. 137, pl. CCXXVI [2]), fig. 6.
1860. *Nucula lepidula* Reeve, Elem. Conch., II, p. 96.
1871. *Yoldia lepidula* Sowerby, Conch. Icon., XVIII, *Yoldia*, pl. II, fig. 7.
1890. *Yoldia lepidula* Paetel, Cat. Conch. Samm., III, p. 226.
1906. *Yoldia lepidula* Melvill & Standen, Proc. Zool. Soc. London. p. 792.

I have compared the "Siboga" shells with specimens of *Y. lepidula* from round Borneo, and can find no differences between them.

Distribution: — *Y. lepidula* has been recorded from Borneo to Persian Gulf.

The "Siboga Expedition" dredged shells of this species from St. 2 (7° 25′ S., 113° 16′ E., 56 metres), St. 4 (7° 42′ S., 114° 12′.6 E., 9 metres) and St. 319 (6° 16′.5 S., 114° 37′ E., 82 metres); all these stations are in the Java Sea.

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[1]) VERRILL, A. E. and BUSH, K. J. — Amer. Journ. Sci., (4) III, p. 54 (1897).

[2]) This plate bears the wrong number 223 instead of 226.

2. *Yoldia* sp.

A single left valve of a species of *Yoldia* brought up in a deep sea trawl at St. 18 (7° 28′.2 S., 115° 24′.6 E.; 1018 metres) is quite unlike any of the already known species. With a single, badly worn valve, however, I do not feel justified in describing it as a new species.

Subfamily MALLETIINAE.

Genus **Malletia** Desmoulins.

1832. *Malletia* Desmoulins, Act. Soc. Linn. Bordeaux, V, p. 85.
1833. *Solenella* Sowerby, Proc. Zool. Soc. London, p. 197.
1840. *Ctenoconcha* Gray, Synop. Conch. Brit. Mus., p. 135.
1858. *Malletia* Adams, H. & A., Gen. Rec. Moll., II, p. 549.
1860. *Solenella* Hanley in Sowerby, Thes. Conch., III, p. 164.
1886. *Malletia* Fischer, P., Man. Conchyliol., p. 986.
1897. *Malletia* Verrill & Bush, Amer. Journ. Sci., (4) III, p. 56.

For a good description of this genus reference may be made to VERRILL & BUSH's paper cited above. The genotype is *Malletia chilensis* Desmoulins.

1. *Malletia conspicua* Smith.

1895. *Malletia conspicua* Smith, Ann. Mag. Nat. Hist., (6) XVI, p. 17, pl. II, fig. 12.
1897. *Malletia conspicua* Smith, Illustr. Zool. "Investigator", Moll., pl. II, figs. *7a*, *b*.

As SMITH noted in his description *M. conspicua* is closely allied to *M. arrouana* Smith from the Arrou Islands, but the form of the shell and the sculpture are different in the two species.

Distribution: — The types of *M. conspicua* were dredged in the Arabian Sea at a depth of 636 fathoms.

In the "Siboga" collection there are shells brought up in deep sea trawls at St. 18 (7° 28′.2 S., 115° 24′.6 E., 1018 metres), St. 48 (8° 4′.7 S., 118° 44′.3 E.,. 2060 metres), St. 52 (9° 3′.4 S., 119° 56′.7 E., 959 metres), St. 300 (10° 48′.6 S., 123° 23′.1 E., 918 metres) and St. 314 7° 36′ S., 117° 30′.8, 694 metres). These finds greatly extend the range of the species.

2. *Malletia erronea* sp. nov. (Plate I, figs. 40—43).

The following is a description of this new species: — Shell of large size, moderately thick, transversely oblong, elongate, compressed; anteriorly truncate; posteriorly arcuate above, obliquely truncated below; very inequilateral; anterior dorsal slope somewhat convex, posterior almost straight; ventral margin almost straight; umbones rather prominent, acuminately rounded; sculpture consisting of close-set, concentric striae, rather irregular on posterior third of shell; two feebly developed radiating ridges from behind the umbones to posterior ventral margin of shell; hinge-plate well developed, with about 20 teeth anterior to and about 30 posterior to umbo. Shell of shining pale straw to brownish colour; nacre shining white.

Measurements of Holotype: — Length 18.6 mm., height 8.7 mm., diameter 5 mm.

Habitat: — A single shell of *M. erronea* was brought up in a deep-sea trawl at St. 300 (10° 48′.6 S., 123° 23′.1 E., 918 metres).

Remarks: — The comparatively long and narrow shell and the truncate extremities distinguish *M. erronea* from other species of the genus.

3. *Malletia encrypta* sp. nov. (Plate I, figs. 44, 45).

The following is a description of this new species: — Shell of medium size, moderately thick, oblong, very tumid; obliquely rounded anteriorly, subtruncate posteriorly, anterior dorsal slope greatly arcuate, posterior almost straight; ventral margin slightly arched; subequilateral; umbones very convex, tumid, sculpture consisting of very regular, close-set, concentric striae; hinge-plate moderately strong, with about 14 teeth anterior to and 22 posterior to umbo. Shell very glossy, pale straw coloured; nacre dull white.

Measurements of Holotype: — Length 13 mm., height 9 mm., diameter 6.6 mm.

Habitat: — The unique Holotype of *M. encrypta* was brought up in a deep-sea trawl at St. 178 (2° 40′ S., 128° 37′.5 E., 835 metres).

Remarks: — *M. encrypta* exhibits a superficial resemblance to *M. dunkeri* Smith [1]), but the form of the shell, the sculpture and the more extensive hinge are distinctive.

4. *Malletia humilior* sp. nov. (Plate VIII, figs. 3, 4).

The following is a description of this new species: — Shell of small size, thick, oblong, somewhat swollen; sharply rounded at anterior end, broader behind, slightly rostrate above; obliquely truncated posteriorly; dorsal slope almost straight, ventral margin arcuate; umbones small, subcentral, greatly raised above dorsal margin; sculpture consisting of very regular, low concentric ridges; two radial ridges indicated on posterior slope; hinge-plate moderately developed; about 12 teeth anterior to and 16 posterior to umbo. Shell pale yellow, nacre shining white.

Measurements of Holotype: — Length 6.4 mm. height 4.5 mm., diameter 3.5 mm.

Habitat: — Two shells of *M. humilior* were brought up in a deep-sea trawl at St. 88 (0° 34′.6 N., 119° 8′.5 E., 1301 metres).

Remarks: — The small size, very regular sculpture and the slightly rostrate posterior upper margin of the shell distinguish this species.

5. *Malletia tripartita* sp. nov. (Plate I, figs. 46, 47).

The following is a description of this new species: — Shell of medium size, thin, oblong, subquadrate, moderately, tumid, rounded at anterior end, subtruncate posteriorly; anterior dorsal slope slightly arched, posterior slope greatly curved; umbones small, acutely rounded, not very raised above dorsal margin; sculpture consisting of well marked but shallow, rounded ridges on only a quadrate area in middle of shell, almost smooth on both ends; hinge-plate moderately strong, with about 14 teeth anterior to and 20 posterior to umbo. Shell light yellow; nacre shining yellowish white.

Measurements of Holotype: — Length 7.4 mm., height 5 mm., diameter 3.5 mm.

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[1]) Smith, E. A. — "Challenger" Lamellibranchia, p. 323 (1885).

Habitat: — The unique Holotype was brought up in a deep-sea trawl at St. 211 (5° 40′.7 S., 120° 45′.5 E., 1158 metres).

Remarks: — The sculpture of this species, which is restricted only to a quadrate area in the middle of the shells, is very characteristic, and at once distinguishes it from other species of the genus.

Genus **Neilonella** Dall.

1881. *Neilonella* (as a section of *Leda*) Dall, Bull. Mus. Comp. Zool. Harvard, IX, p. 125.
1886. *Neilonella* Dall, Bull. Mus. Comp. Zool. Harvard, XII, p. 254.
1897. *Neilonella* Verrill & Bush, Amer. Journ. Sci., (4) III, p. 57.
1898. *Neilonella* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 582.

Neilonella was proposed as a section of the genus *Leda* Schumacher (= *Nuculana* Link), but was later given generic rank and transferred to the subfamily Malletiinae. The genotype is *Neilonella corpulenta* Dall.

The four new species described below are assigned to this genus with some hesitation. They correspond in all characters to the definition of this genus of fossil forms, and in the present unsatisfactory condition of the nomenclature of the family I have referred them to DALL's genus rather than introduce a new generic name.

1. *Neilonella dubia* sp. nov. (Plate I, figs. 48, 49).

The following is a description of this new species: — Shell of medium size, moderately thick, subovate, tumid, inequilateral; broadly rounded anteriorly, greatly narrowed posteriorly; subtruncate; anterior dorsal slope obliquely slanting, posterior slope arched, concave; ventral margin greatly arcuate; umbones very prominent, tumid, strongly curved inwards and backwards; sculpture consisting of concentric, shallow low ridges; posterior slope of valves almost smooth; hinge-plate strong, anterior series with about 18 and posterior with 22 teeth separated by an edentulous notch in middle; internal cartilage absent. Shell of olive yellow colour; nacre shining bluish white.

Measurements of Holotype: — Length 12 mm., height 7.5 mm., diameter 4.8 mm.

Habitat: — The Holotype with the left valve in fragments and a right valve were brought up in a deep-sea trawl at St. 52 (9° 3′.4 S., 119° 56′.7 E., 959 metres).

2. *Neilonella schepmani* sp. nov. (Plate I, figs. 50, 51).

The following is a description of this new species: — Shell of medium size, moderately thick, donaciform, moderately tumid; inequilateral; narrowly rounded anteriorly; greatly narrowed and rounded posteriorly; both anterior and posterior dorsal slopes straight, slanting; ventral margin greatly arcuate; umbones smooth, acute, rounded, curved inwards and backwards; sculpture below the beak consisting of regular, concentric low ridges; hinge-plate moderately strong, anterior series with about 12, posterior with 18 teeth. Shell of a pale straw colour; nacre shining white.

Measurements of Holotype: — Length 6.5 mm., height 4.6 mm., diameter 3.7 mm.

Habitat: — Two shells of *N. schepmani* were brought up in a deep-sea trawl at St. 221 (6° 24′ S., 124° 39′ E., 2798 metres).

Remarks: — The very peculiar donaciform appearance of the shell and sculpture are characteristic of this species.

3. *Neilonella weberi* sp. nov. (Plate VIII, figs. 5—8).

The following is a description of this new species: — Shell of small size, thick, rounded ovate, subequilateral, slightly oblique, very tumid; ventral margin very arcuate; umbones prominent, tumid, obtuse curved inwards and backwards; sculpture consisting of very regular, low, concentric ridges, equally developed all over; hinge-plate moderately strong, anterior series of teeth somewhat shorter than posterior. Shell of a pale yellow colour, nacre white.

Measurements of Holotype: — Length 4.3 mm., height 3.8 mm., diameter 3 mm.

Habitat: — The unique partly damaged Holotype of *Neilonella weberi* was brought up in a deep-sea trawl at St. 271 (5° 46′.7 S., 134° 0′ E., 1788 metres).

4. *Neilonella delicatula* sp. nov. (Plate I, figs. 52, 53).

The following is a description of this new species: — Shell of small size, very thin, delicate, rounded ovate; subequilateral; moderately tumid; regularly curved both anteriorly and posteriorly; ventral margin greatly arched; umbones moderately prominent, acute, curved inwards and backwards; shell surface almost smooth, hinge-plate moderately developed; 8 minute teeth in anterior, 10 in posterior series. Shell of a yellowish colour, nacre white.

Measurements of Holotype: — Length 4 mm., height 3.2 mm., diameter 2.8 mm.

Habitat: — The unique Holotype brought up in a deep-sea trawl at St. 211 (5° 40′.7 S., 120° 45′.5 E., 1158 metres).

Remarks: — The shell of this species is very thin and fragile. In form *N. delicatula* resembles *N. weberi* Prashad, but the sculpture and the hinge of the two are very different.

Order FILIBRANCHIA.

Family ANOMIIDAE.

Genus **Anomia** Linn.

1758. *Anomia* Linnaeus, Syst. Nat. (ed. X), p. 700.
1823. *Anomia* Children, Quart. Journ. Sci. Lit. Arts, XV, p. 46.
1847. *Anomia* Gray, Proc. Zool. Soc. London, p. 201.
1858. *Anomia* Adams, H. & A., Gen. Rec. Moll., p. 563.
1913. *Anomia* Suter, Man. New Zealand Moll., p. 841.
1925. *Anomia* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 83.

SUTER is wrong in suggesting that O. F. MÜLLER [1]) designated *Anomia craniolaris* as the genotype of *Anomia* in 1776, for in the work cited there is no mention of any of the species having been selected as the type. The first type designation was made by CHILDREN in 1823, who selected *Anomia ephippium* Linnaeus as the genotype. WOODRING has published a good description of the genus *Anomia*.

1. *Anomia* (*Anomia*) *achaeus* Gray. (Plate I, figs. 54—57).

1849. *Anomia achaeus* Gray, Proc. Zool. Soc. London, p. 116.
1850. *Anomia achaeus* Gray, Cat. Conch. Brit. Mus., I, p. 16.
1856. *Anomia achaeus* Hanley, Rec. Biv. Shells, p. 314.
1858. *Anomia achaeus* Adams, H. & A., Gen. Rec. Moll., II, p. 564.
1859. *Anomia achaeus* Reeve, Conch. Icon., XI, *Anomia*, pl. III, figs. 12*a*—*c*.
1860. *Anomia achaeus* Reeve, Elem. Conch., II, p. 48.
1890. *Anomia achaeus* Paetel, Cat. Conch., Samm., III, p. 241.
1902. *Anomia achaeus* Shopland, Proc. Malacol. Soc. London, V, p. 179.
1906. *Anomia achaeus* Melvill & Standen, Proc. Zool. Soc. London, p. 793.
1906. *Anomia achaeus* Standen & Leicester, Ceylon Pearl Oyster Rept. V, p. 288.
1911. *Anomia achaeus* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 15, pl. IV, figs. 1, 2.

The species of this genus are in a state of great confusion, but there can be no doubt that several of the so-called species of GRAY and REEVE are based on individual variations of the shells. Unfortunately the material at my disposal is not sufficient for a revision of the Indo-Pacific species, but from an examination of the types of the various species in the British Museum (Nat. Hist.), London, I have little doubt that *A. plenilunium* Reeve (op. cit., pl. 1, fig. 2), *A. sol* Reeve (pl. 1, fig, 4), *A. malleata* Reeve (pl. VI, fig. 25) and *A. argyritis* Reeve (pl. VI, fig. 31) are all synonyms of this variable species.

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1) MÜLLER, O. F. — Prodr. Zool. Dan., p. 248 (1776).

Distribution: — *A.* (*A.*) *achaeus* was described from Karachi, West coast of India, but has since been recorded from Aden and the Persian Gulf. If my surmise of the various species, mentioned above, being synonyms of *A.* (*A.*) *achaeus* is correct, it would be seen that the species has a wide distribution in the Indo-Pacific region.

The "Siboga" Expedition collected a good series of specimens of *A.* (*A.*) *achaeus* from Kawa Bay, West Coast of Ceram (St. 179), and two young shells at Ambon Anchorage (St. 231).

Genus **Placenta** Retzius.

1788. *Placenta* Retzius, Dissert. sist. nov. test. Gen., p. 15.
1848. *Placenta* and *Placuna* Gray, Proc. Zool. Soc. London, p. 114.
1850. *Placuna* and *Placenta* Gray, Cat. Conch. Brit. Mus., I, pp. 2, 3.
1895. *Placenta* and *Ephippium* Dall, Trans. Wagner Free Inst. Philadelphia, p. 774.

The difference between the shells of the so-called genera *Placenta* and *Ephippium* Röding (= *Placuna* of authors [1]) are not so important as to allow of their being considered as distinct genera; they may at most be regarded as two subgenera of the genus *Placenta*.

Placenta s. s., is not represented in the "Siboga" collection, but there is a single shell of the species *P. sella* which is the type-form of the subgenus *Ephippium*.

For an account of the subgenus *Ephippium* reference may be made to Dall's work.

1. *Placenta* (*Ephippium*) *sella* (Gmelin).

1756. *Ostreum amboinicum* Lesser, Testaceo-Theologia, pp. 470, 472, fig. 136.
1758. *Ephippium polonicum* Seba, Mus. (ex parte), p. 181, pl. XC (central fig.).
1767. *Selle Polonoise* Davilla, Cat., I, p. 280, N° 582.
1770. *Selle Polonoise* Knorr, Vergnügungen der Augen, etc., V, pl. XXXIX, fig. 1.
1785. *Ephippium anglicum maximum*, etc., Chemnitz, Conch.-Cab., VIII, p. 111, pl. LXXIX, fig. 714.
1788. *Placuna ephippium* Retzius, Diss. Sist. nova test. Gen. p. 16.
1790. *Anomia sella* Gmelin, Syst. Nat., (ed. XIII), p. 3345.
1797. *Placuna ephippium* Humphrey, Mus. Calonnianum, p. 45, N° 827.
1805. *Placuna sella* De Roissy in Buffon Hist. Nat. Moll, VI, p. 238.
1817. *Anomia sella* Dillwyn, Descr. Cat., I, p. 297.
1817. *Placenta ephippium* Schumacher, Essai Nouv. Syst., p. 113 (not the figure).
1819. *Placuna sella* Lamarck, Hist. Nat. Anim. sans Vertèb., VI, p. 224.
1825. *Placuna sella* Sowerby, Cat. Tankerville, p. 28.
1830. *Placuna sella* Menke, Synop. Method. Moll., p. 97.
1836. *Placuna sella* Deshayes, in Lamarck Anim. sans Vertèb., VII, p. 207.
1842. *Placuna sella* Reichenbach, Die Land-, Süssw., Seeconch., p. 91, pl. LVII, fig. 676.
1844. *Placuna sella* Potiez & Michaud, Gal. Douai, II, p. 43.
1848. *Placenta sella* Gray, Proc. Zool. Soc. London, p. 114.
1850. *Placuna sella* Gray, Cat. Conch. Brit. Mus., I, p. 2.
1855. *Placuna sella* Berge, Conchylienbuch, p. 90, pl. XIII, fig. 3.
1856. *Placuna sella* Hanley, Rec. Biv. Shells, p. 311.
1860. *Placuna sella* Reeve, Elem. Conch., II, p. 50.
1862. *Placuna sella* Bronn, Klass. Ord. Weicht., III, Atlas I, pl. XLI, fig. 7.
1867. *Placuna sella* Mitchell, Cat. Mus. Madras. p. 75.
1871. *Placuna sella* Sowerby in Reeve Conch. Icon., XVIII, *Placuna* fig. 1.

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[1] For a detailed discussion on the nomenclature of the family see Dall, op. cit. p. 769—774 (1895).

1877. ? *Placuna sella* de Man, Rech. Faun. Madagascar, etc., pt. V, *Mollusques*, p. 10.
1877. *Placuna sella* Kobelt, Illust. Conchylienb., p. 376, pl. CX, fig. 13.
1884. *Placuna* (*Placenta*) *sella* Tryon, Struct. Syst. Conch., III, p. 296, pl. CXXXI, figs. 7, 8.
1889. *Placunema sella* Morlet, L., Journ. Conchyliol., XXXVIII, p. 161.
1890. *Placuna sella* Paetel, Cat. Conch. Samm., III, p. 244.
1891. *Placuna sella* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 208.
1905. *Placuna sella* Hidalgo, Cat. Filip., p. 386.
1909. *Placuna* (*Placunema*) *sella* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math. (7) V, p. 108.
1910. *Placuna sella* Dautzenberg, Bull. Inst. Oceanogr., N⁰ 161, p. 3.
1929. ? *Placuna sella* Dautzenberg, Faun. Colon. Francais., III, fasc. 4, p. 558.

P. (*E.*) *sella*, the Saddle Oyster, has a very wide distribution in the Pacific Area, but the authentic records of its occurrence in the Indian Ocean do not extend west of the Mergui Archipelago, DE MAN's record of this species from Madagascar is open to doubt, as leaving aside DAUTZENBERG's references to the species which are based on DE MAN, I have not been able to find any specimens in the collections examined by me or any other records of the species from this area.

In the "Siboga" collection the species is represented by a magnificent shell, about 200 mm. in diameter collected from the coral reef at Sanana Bay, east coast of Sula Besi (St. 193).

Family ARCIDAE.

Genus **Arca** Lamarck.

The question of the genotype of *Arca s.s.*, is still a matter for discussion. I had finished the writing up of my results on the Arcidae of the "Siboga" collection long before I came across STEWART's valuable contribution to this very intricate question, and as is discussed further on, I have followed COX in accepting CHILDREN's designation of *Arca tortuosa* (Linn.) as the genotype of *Arca s.s.*, but I am more inclined now to accept SCHUMACHER's earlier designation.

For the sake of completeness I have treated the synonymies of the various subgenera of this family at greater length than has been done for the other families of Pelecypods discussed in this report.

Subgenus **Navicula** Blainville.

1825. *Navicula* Blainville, Dict. Sci. Nat., XXXIV, p. 319.
1927. *Navicula* Cox, Rept. Palaeontol. Zanzibar, p. 93.

In view of no earlier genotype of *Arca s.s.*, having been selected and CHILDREN[1]) definitely designating *A. tortuosa* (Linn.) as its genotype in 1823, COX has revived BLAINVILLE's name *Navicula* for what had usually been accepted as *Arca s.s.* The genotype would be *A.* (*N.*) *noae* (Linn.).

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1) CHILDREN, J. G. — Quart. Journ. Sci. Lit. Arts, XIV, p. 319 (1823).

1. *Arca* (*Navicula*) *avellana* Lamarck.

1784. *Arca Noae* var., Chemnitz (ex parte), Conch.-Cab., p. 183, pl. LIV, fig. 532.
1817. *Arca Noae* var. Savigny, Descr. Egypte Coq., pl. X, figs. 11, 12.
1819. *Arca avellana* and *A. retusa* Lamarck, Anim. sans Vertèb., VI, pp. 38, 39.
1827. *Arca tetragona* Audouin (nec Poli, non Lamarck). Expl. Descr. Egypte, XXII, p. 203.
1833. *Byssoarca maculata* Sowerby, Proc. Zool. Soc. London, p. 17.
1844. *Arca maculata*, *A. imbricata* (nec Bruguière), *A. cunealis* and *A. volucris* Reeve, Conch. Icon., II, *Arca*, pl. XI, figs. 71, 73, pl. XIII, fig. 87 and pl. XVI, fig. 109.
1844. *Arca volucris* Reeve, Proc. Zool. Soc. London, p. 126.
1847. *Arca arabica* Philippi, Abbild. Beschreib. Conch., III, p. 28, *Arca*, pl. IV, fig. 3.
1848. *Arca Kraussi* Krauss, Südafr. Moll., p. 14, pl. I, fig. 11.
1848. *Arca avellana*, *A. cunealis*, *A. imbricata* (nec Bruguière), *A. maculata*, *A. retusa* and *A. volucris* Nyst, Mém. Acad. Roy. Belgique, XXII, pp. 12, 22, 34, 42, 60, 78.
1849. *Arca Kraussi* Philippi, Abbild. Beschreib. Conch. III, p. 88, *Arca*, pl. V, figs. 8—10.
1861. *Arca maculata* Mörch, Malakozool. Blätt., VII, p. 203.
1863. *Arca cunealis* and *A. kraussi* Deshayes, Moll. Réunion, p. 22.
1865. *Arca imbricata* Vaillant, Journ. Conchyliol., XIII, p. 115.
1869. *Arca retusa* Issel, Malacol. Mar. Rosso, pp. 90, 258.
1870. *Arca maculata* Dunker, Novitat. Conch. Moll. Mar. p. 110, pl. XXXVII, figs. 14—16.
1871. *Arca maculata* von Martens & Langkavel, Donum Bismarck. pp. 64, 67.
1871. *Arca Kraussi* Lischke, Japan. Meer. Conch., II, p. 141.
1871. *Arca arabica* Fischer, P., Journ. Conchyliol., XIX, p, 213.
1880. *Arca Kraussi*, *A. arabica* and *A. acuminata* von Martens, Möbius Beiträg. Meeresf. Mauritius Seychell. p. 319.
1884. *Arca imbricata* Smith (nec Brugière), Rep. Voy. "Alert", p. 110.
1885. *Arca imbricata* Smith (ex parte), "Challenger" Lamellibranchia, p. 259.
1886. *Arca arabica* Cooke, Ann. Mag. Nat., Hist., (5) XVIII, p. 92.
1888. *Arca Kraussi* Jousseaume, Mém. Soc. Zool. France, I, p. 213.
1889—91. *Arca maculata*, *A. acuminata*, *A. volucris*, *A. cunealis*, *A. retusa* and *A. avellana* Kobelt in Martini, Chemn. Conch.-Cab., (N. F.) VIII (2), *Arca*, p. 76, pl. XXI, figs. 7—10; p. 138, pl. XXXV, figs. 7—8; p. 147, pl. XXXVII, fig. 9; p. 187, pl. XLVI, figs. 3; p. 218, pl. IV, fig. 8; p. 223.
1891. *Arca imbricata* Smith (nec Bruguière), Proc. Zool. Soc. London, p. 531.
1892. *Arca imbricata* Sowerby, Mar. Shells S. Africa, p. 65.
1898. *Arca imbricata* Melvill & Standen, Journ. Conch., IX, p. 81.
1899. *Barbatia imbricata* Melvill & Standen, Journ. Linn. Soc. London, (Zool.), XXVII, p. 185.
1899. *Arca maculata* Hedley, Mem. Austral. Mus., III, pp. 491, 528.
1900. *Arca imbricata* Smith, Proc. Zool. Soc. London, p. 118.
1901. *Arca arabica* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat. LXIX, p. 289.
1901. *Arca retusa* Fischer, H., Journ. Conchyliol., XLIX, p. 128.
1902. *Arca imbricata* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1903. *Arca maculata* Smith, Faun. Geogr. Maldive Laccadive Archipel, II, p. 623.
1904. *Arca imbricata* Lamy, Bull. Mus. d'Hist. Nat. Paris, X, p. 271.
1904. *Arca avellana* and *A. retusa* Lamy, Journ. Conchyliol., LII, p. 136, pl. V, figs. 1, 2, 12.
1905. *Arca imbricata* Tillier & Bavay, Bull. Soc. Zool. France, XXX, p. 177.
1905. *Arca volucris* Hidalgo, Cat. Filip., p. 375.
1906. *Arca maculata* Owston, Japan. Loochooan Shells, p. 33.
1906. *Arca imbricata* Lamy, Bull. Mus. Nat. d'Hist. Paris XII, p. 315.
1906. *Barbatia imbricata* Melvill & Standen, Proc. Zool. Soc. London, p. 796.
1907. *Arca* (*Arca*) *imbricata* and var. *avellana* Lamy, Journ. Conchyliol., LV, pp. 26, 28.
1909. *Arca kraussi* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 110.
1910. *Arca imbricata* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1910. *Arca imbricata* var. *avellana* Lamy, Journ. Conchyliol., LVIII, p. 30.
1911. *Arca imbricata* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 11—15.

1917. *Arca imbricata* var. *arabica* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 26.
1917. *Arca imbricata* var. *avellana* Odhner, Kungl. Sv. Akad. Handl., LII (N⁰ 16), p. 21.
1919. *Arca imbricata* var. *avellana* Odhner, Ark. Zool., XII, N⁰ 61, p. 8.
1926. *Arca imbricata* Pallary, Mém. Inst. Egypte, XI, p. 114, pl. XIV.
1929. *Arca imbricata* vars. *arabica* and *avellana* Dautzenberg, Faun. Colon. Francais., III, pp. 573, 574.

After a careful examination of the collections in the British Museum (Nat. Hist.), London, the "Siboga" collection and the literature on the subject I have come to the conclusion that West Indian species to which the name *A. imbricata* Bruguière may be applied is certainly distinct from the Indo-Pacific form. The Indo-Pacific form, as the synonymy given above shows, has been given various names by the different authors, and I have out of these selected the oldest name, *A. avellana* Lamarck, for the species. My conclusions in general agree with Lamy (loc. cit.), but I differ from him regarding the Indo-Pacific form being only a variety of the West Indian species. Further the two forms *arabica* and *avellana* cannot be distinguished from one another and I have, therefore, included the former in the synonymy of the latter. Probably *A. martensi* Dunker[1]) is also a form of this species, but I have not been able to get together sufficient material to settle this question.

Distribution: — *A. avellana* is widely distributed in the Indo-Pacific area. It has been recorded from the Gulf of Suez and the Red Sea, to S. Africa, from the Mascarenes through the Gulf of Manaar, Mergui Archipelago, the Philippines and New Caledonia to Australia and as far north as Japan.

In the "Siboga" collections *A. avellana* is represented by specimens from the Bay of Badjo, West Coast of Flores (St. 50), Bay of Nangamessi, Sumba (St. 53), Anchorage off Dongala, Palos Bay, Celebes (St. 86), Anchorage off Sawan, Siau Island (St. 125), Anchorage off Lirung, Salibabu Island (St. 133), Anchorage off Laiwui, Coast of Obi Major (St. 142), Wunoh Bay, N. W. coast of Waigeu Island (St. 152), St. 225 (5700 m. N., 279° E. from South point of South Lucipara Island) and Tual Anchorage, Kei Islands (St. 258). All the specimens in the "Siboga" collection are of a small size, the largest being 33 mm. long × 17.5 mm. high × 22.8 mm. maximum diameter.

2. *Arca* (*Navicula*) *ventricosa* Lamarck.

1705. *Pecten saxatilis* Rumph, Amboin. Rariteitk., p. 143, pl. XLIV, fig. L.
1767. *Pecten saxatilis* Petiver, Anim. Amboin, p. 4, pl. XVII, fig. 6.
1819. *Arca ventricosa* Lamarck, Anim. sans Verteb., VI, p. 38.
1833. *Byssoarca truncata* Sowerby, Proc. Zool. Soc. London, p. 19.
1835. *Arca ventricosa* Deshayes in Lamarck, Anim. sans. Verteb., VI, p. 463,
1843. *Arca ventricosa* Hanley, Rec. Biv. Shells, p. 153.
1844. *Arca zebra* and *A. truncata* Reeve, Conch. Icon., II, *Arca*, pl. XI, figs. 69, 74.
1845. *Arca truncata* and *A. zebra* Catlow & Reeve, Conch. Nomencl. p. 51.
1847. *Arca ventricosa* Philippi, Abbild. Beschreib. Conch., II, p. 211, *Arca*, pl. III, figs. 4, 5.
1848. *Arca* (*Byssoarca*) *truncata* and *A. ventricosa*, Nyst, Mém. Acad. Roy. Belgique, XXII, pp. 74, 76.
1858. *Arca* (*Byssoarca*) *zebra* Fischer, P. (non Sowerby), Journ. Conchyliol., VII, p. 339.

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1) Dunker, W. B. R. H. — Novitat. Conch., Moll. Mar. p. 111, pl. XXXVII, figs. 17, 18 (1870).

1860. *Arca zebra* Reeve (non Sowerby), Elem. Conch., II, p. 93.
1869. *Arca umbonata* Dunker (non Lamarck), Cat. Mus. Godeffroy, IV, p. 114.
1874. *Arca ventricosa* Dunker, Cat. Mus. Godeffroy, V, p. 174.
1889. *Arca* (s. s.) *ventricosa* and *A.* (s. s.) *truncata* Kobelt in Martini Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, p. 61, pl. XVIII, figs. 1, 2 and p. 133, pl. XXXIV, figs. 7, 8.
1890. *Arca truncata, A. ventricosa* and *A. zebra* Paetel, Cat. Conch. Samm., III, p. 212.
1898. *Arca zebra* Melvill & Sykes, Proc. Malacol. Soc. London, V, p. 45.
1904. *Arca ventricosa* Lamy, Bull. Mus. d'Hist. Nat. Paris, X, p. 271.
1905. *Arca ventricosa* Hidalgo, Cat. Filip., p. 374.
1906. *Arca ventricosa* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 316.
1907. *Arca ventricosa* Lamy, Journ. Conchyliol., LV, p. 39.
1910. *Arca ventricosa* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1917. *Arca ventricosa* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 27.
1927. *Navicula ventricosa* Cox, Rept. Palaeont. Zanzibar, p. 93.
1927. *Arca ventricosa* Tomlin, Trans. Zool. Soc. London, XXVI, p. 303.

This species, which is widely distributed in the Indo-Pacific, is represented in the "Siboga" collection by two adult shells (47 mm. long) taken at St. 225 (5700 m. N., 279° E. from South point of South Lucipara Island and Ambon Anchorage (St. 231) respectively and the left valve of a young shell collected at Macassar.

3. *Arca* (*Navicula*) *navicularis* Bruguière, var. *linter* Jonas.

1845. *Arca linter* Jonas, Zeitschr. Malakozool., p. 172.
1847. *Arca linter* Philippi, Abbild. Beschreib. Conch., II, p. 209, *Arca*, pl. III, fig. 1.
1848. *Arca linter* Nyst, Mém. Acad. Roy. Belgique, XXII, p. 42.
1882. *Arca navicularis* var., Dunker, Ind. Moll. Mar. Japon., p. 232, pl. XIV, figs. 16, 17.
1888. *Arca navicularis* var., and *A. linter* Kobelt in Martini, Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, pl. XVII, figs. 3, 4; p. 19, pl. VI, figs. 1, 2.
1890. *Arca linter* Paetel, Cat. Conch. Samm., III, p. 211.
1907. *Arca* (*Arca*) *navicularis* var. *linter* Lamy, Journ. Conchyliol., LV, p. 20.
1909. *Arca navicularis* var. *linter* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 109.

In treating this form as a distinct variety I have followed Lamy, as I have not sufficient material to decide whether it is not only a slight variation of the typical *A. navicularis* as Smith [1]) considered it to be. All the specimens collected by the "Siboga" Expedition are young shells and in this stage at least they appear to represent quite a distinct variety. No specimens of the typical *A. navicularis* were obtained by the "Siboga" Expedition.

Distribution: — This variety appears to have a wide distribution in the Red Sea and the Indo-Pacific Area. It is known from Suez to Madagascar and from Aden through the Gulf of Manaar, Gulf of Siam to Torres Strait and even south-east Australia: northwards in the Pacific, it is also recorded from the Chinese and Japanese waters.

The "Siboga" Expedition collected specimens of this variety on the bank between the islands of Bahuluwang and Tambolungan, South of Saleyer (St. 66), West of Kwandang Bay entrance (St. 116), Anchorage east of Dangar Besar, Saleh Bay (St. 313) and at Macassar.

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1) Smith, E. A. — "Challenger" Lamellibranchia, p. 259 (1884).

Subgenus **Anadara** Gray.

1847. *Anadara* Gray, Proc. Zool. Soc. London, p. 198.
1847. *Scapharca* Gray, ibid., p. 198.
1857. *Scapharca* Adams, H. & A., Gen. Rec. Moll., II, p. 537.
1898. *Scapharca* Dall (ex parte), Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 617.
1907. *Anadara* Lamy, Journ. Conchyliol., LV, p. 5.
1927. *Anadara* Cox, Rept. Palaeontol. Zanzibar, p. 34.

I have adopted this subgenus as restricted by Lamy and recently so well defined by Cox, and include in its synonymy *Scapharca* Gray and *Anomalocardia* Adams (nec Schumacher, 1817 non the pre-Linnean one of Klein 1753). The genotype is *A.* (*A.*) *antiquata* Linn. 1)).

3. *Arca* (*Anadara*) *antiquata* Linn.

1684. *Concha Indica*, etc. Bonanni, Recr. Mentis et Oculi, fig. 74.
1685. Lister Hist. Conch., pl. CCXXX.
1685. *Pectunculus allus*, etc. Lister, Hist. Conch., pl. CCXXXVI, fig. 70.
1741. *Pecten virgineus* Rumph, Amboin. Rarit., pl. XLIV, fig. 1.
1742. *Concha Rhomboidalis*, etc. Gualtieri, Ind. Test., pl. LXXXVII, figs. C, C.
1758. *Arca antiquata* Linnaeus, Syst. Nat., (ed. X), p. 694.
1764. *Arca antiquata* Linnaeus, Mus. Lud. Ulr., p. 518.
1767. *Arca antiquata* Linnaeus, Syst. Nat. (ed. XII), p. 1141.
1780. *Arca antiquata* Born, Test. Mus. Caes. Vindobon., p. 89.
1789. *Arca antiquata* Bruguière, Encyclopéd. Méthod., I, p. 103.
1790. *Arca antiquata* Gmelin, Syst. Nat., (ed. XIII), p. 3309.
1816. *Arca antiquata* Blainville, Dict. Sci. Nat., II, p. 461.
1835. *Arca antiquata* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 470.
1843. *Arca antiquata* Hanley, Rec. Biv. Shells, p. 157, pl. XVIII, fig. 50.
1844. *Arca maculosa* and *A. antiquata* Reeve, Conch. Icon., II, *Arca*, pl. IV, fig. 24, pl. IX, fig. 160.
1845. *Arca antiquata* Catlow & Reeve, Conch. Nomencl., p. 48.
1848. *Arca antiquata* and *A. maculosa* Nyst, Mém. Acad. Roy. Belgique, XXII, pp. 10, 42.
1853. *Arca antiquata* Mörch, Cat. Yoldi, II, p. 41.
1855. *Arca antiquata* Hanley, Ipsa Linn. Conch., p. 93, pl. IV, fig. 3.
1857. *Arca* (*Anomalocardia*) *antiquata* Adams, H. & A., Gen. Rec. Moll., II, p. 536.
1860. *Arca antiquata* and *A. maculosa* Reeve, Elem. Conch., II, p. 93.
1869. *Anomalocardia maculosa* and *A. scapha* (ex parte) Frauenfeld, Abhandl. Zool.-Bot. Ges. Wien, XIX, p. 886.
1877. *Arca maculosa* de Man, Rech. Faun. Madagascar, etc. pt. V, Mollusques, p. 7.
1886. *Arca transversa* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 95.
1889. *Arca* (*Anomalocardia*) *maculosa* Kobelt, in Martini Chemn. Conch. Cab. (N. F.), VIII (2), *Arca*, p. 84, pl. XXIII, figs. 3, 4.
1890. *Arca antiquata* and *A. maculosa* Paetel, Cat. Conch. Samm., III, pp. 214, 215.
1891. *Arca antiquata* Smith, Proc. Zool. Soc. London, p. 431.
1901. *Arca scapha* (ex parte) Lamy, Journ. Conchyliol., LII, pp. 151, 152.
1903. *Arca* (*Anadara*) *antiquata* Smith, Faun. Geogr. Maldive Laccadive Archipel., II, p. 623.
1905. *Arca antiquata* Hidalgo, Cat. Filip., p. 371.
1907. *Arca* (*Anadara*) *antiquata* Lamy, Journ. Conchyliol., LV, p. 199.
1910. *Arca antiquata* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Arca* (*Anadara*) *antiquata* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 9, 11, 13—16.

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1) I have since had the occasion to refer to Stewart's valuable work — Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 83 (1930) — where he has accepted Schumacher's designation of *Arca antiquata* (Linn.) as the type of *Arca s. s.* If this view is accepted, as I believe it to be correct, the subgeneric name *Anadara* Gray, as adopted in this report, will become an exact synonym of *Arca s.s.*

1917. *Arca* (*Anadara*) *antiquata* and *A.* (*A.*) *scapha* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, pp. 106, 107.
1919. ? *Arca antiquata* var. *scapha* Odhner, Ark. Zool., XII, N⁰ 6, p. 6.
1925. *Arca antiquata* Woodring, Miocene Mollusks from Bowden, Jamaica, pl. IV, figs. 1, 2.
1925. *Arca antiquata* Oostingh, Comm. Geol. Inst. Agri. Univ. Wageningen, N⁰ 9, p. 229.
1927. *Anadara antiquata* Cox, Rept. Palaeontol. Zanzibar, p. 94.
1929. *Arca* (*Anadara*) *antiquata* Dautzenberg, Faun. Colon. Francais., III, Fasc. IV, p. 578.
1930. *Anadara antiquata* Cox, Mon. Geol. Dept. Hunterian Mus. Glasgow Univ., N⁰ 4, p. 150.

Cox, in the paper cited (1927) has recently discussed the question of the identity of *A. antiquata*. He published a full description of the species and was able to confirm the generally accepted idea of the LINNEAN species being the Indo-Pacific species generally referred under this name.

Distribution: — *A. antiquata* is a widely distributed species in the Indo-Pacific area.

In the "Siboga" collection there is a very young specimen from Haingsisi, Samau Island (St. 303) and two half grown shells taken from mud at Sangkapura roads, Bawean Island (St. 323). I also refer with some doubt, two somewhat worn valves from West of Kwandang Bay entrance (St. 116) and Macassar Straits to this species.

4. *Arca* (*Anadara*) *antiquata* Linn., var. *hankeyana* Reeve.

1844. *Arca Hankeyana* Reeve, Conch. Icon., II, *Arca*, pl. X, fig. 68.
1844. *Arca Hankeyana* Reeve, Proc. Zool. Soc. London, p. 47.
1845. *Arca Hankeyana* Catlow & Reeve, Conch. Nomencl., p. 49.
1891. *Arca* (*Anomalocardia*) *Hankeyana* Kobelt, in Martini, Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, p. 203, pl. XLVIII, fig. 3.
1901. *Arca* (*Anomalocardia*) *Hankeyana* Fischer, H., Journ. Conchyliol., LXIX, p. 128.
1907. *Arca* (*Anadara*) *antiquata* var. *Hankeyana* Lamy, Journ. Conchyliol., LV, p. 201.
1917. *Arca* (*Anadara*) *scapha* var. *Hankeyana* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 108.
1929. *Arca* (*Anadara*) *antiquata* var. *Hankeyana* Dautzenberg, Faun. Colon. Francais., III, Fasc. IV, p. 578.

I agree with LAMY that REEVE's species *A. hankeyana* is nothing more than a variety of *A. antiquata* Linn.

Distribution: — REEVE's type was obtained in the harbour of Mozambique, East Africa. FISCHER recorded it from Jibuti in the Gulf of Aden and LAMY referred to it specimens from the Red Sea and New Caledonia.

In the "Siboga" collection there is a single shell of unknown habitat which I refer to this variety.

5. *Arca* (*Anadara*) *granosa* Linn.

1685. *Pectunculus striis raris*, etc. *P. striis magnis*, etc. and *P. striis planis* etc. Lister, Hist. Conch., pl. CCXXXIV, fig. 68, pl. CCXLI, fig. 78, pl. CCXLII, fig. 79.
1741. *Pectunculus granosus* Rumph, Amboin. Rariteitk., p. 143, pl. XLIV, fig. K.
1742. *Concha Rhomboidalis* Gualtieri, Ind. Test., pl. LXXXVII, figs. E, E.
1742. *Bucardium corbula* d'Argenville, Hist. Nat. pp. 332, 335, pl. XXVI, fig. C.
1758. *Arca granosa* Linnaeus, Syst. Nat. (ed. X), p. 694.
1764. *Arca granosa* Linnaeus, Mus. Lud. Ulricae, p. 519.
1767. *Arca granosa* Linnaeus, Syst. Nat., (ed. XII), p. 1142.
1773. *Concha* Bonnani, Test. Mus. Kircher, II, pp. 28, 29, pl. XII, fig. 73.
1773. *Fausse arche à tubercles* Knorr, Delices des Yeux, VI, p. 67, pl. XXXIV, fig. 2.

1780. *Coeur* Favanne, La Conch., pl. LI, fig. CI.
1784. *Arca granosa*, *A. corbula* and *A. granosa minor* Chemnitz, Conch. Cab., VII, p. 219, pl. LVI, fig. 557; p. 222, pl. LVI, figs. 558, 559.
1789. *Arca granosa* and *A. aculeata* Bruguière, Encyclopéd. Méthod., I, pp. 104, 107.
1790. *Arca corbicula* Gmelin, Syst. Nat. (ed. XIII), p. 3310.
1798. *Arca granosa* Bolten, Mus. Boltenianum, p. 174.
1802. *Arca granosa* Bose, Hist. Nat. Coq., III, p. 130.
1816. *Arca granosa* Blainville, Dict. Sci. Nat., II, p. 461.
1817. *Arca granosa* Schumacher, Essai Nouv. Syst., p. 171.
1819. *Arca granosa* vars. b, c and *A. corbicula* Lamarck, Anim. sans Vertèb., VI, pp. 43, 44.
1825. *Arca granosa* Sowerby, Cat. Tankerville, p. 18.
1830. *Arca granosa* Sowerby, Gen. Shells, II, fig. 2.
1834. *Arca granosa* Griffith & Pidgeon, Cuvier Anim. Kingdom, p. 595, pl. XXXIX, fig. 12.
1835. *Arca granosa* and *A. corbicula* Deshayes in Lamarck, Anim. sans Verteb., VI, pp. 471, 473.
1841. *Arca granosa* Reeve, Conch. Syst., I, p. 107, pl. LXXXII, fig. 2.
1843. *Arca Granosa* and *A. Corbicula* Hanley, Rec. Biv. Shells, pp. 157, 158.
1844. *Arca granosa* and *A. cuneata* Reeve, Conch. Icon , II, *Arca*, pl. III, figs. 15 *a*, *b*, pl. VI, fig. 37.
1845. *Arca granosa* Catlow & Reeve, Conch. Nomencl., p. 49.
1848. *Arca aculeata*, *A. corbicula*, *A. corbula*, *A. cuneata*, *A. granosa* and *A. zanzibarensis* Nyst., Mém. Akad. Roy. Soc. Belgique, XXII, pp. 8, 20, 22, 32, 78.
1850. *Arca oblonga* Philippi, Abbild. Beschreib. Conch., III, p. 85, *Arca*, pl. V, fig. 6.
1853. *Anomalocardia granosa* Mörch, Cat. Yoldi, II, p. 41.
1855. *Arca granosa* Hanley, Ipsa Linn. Conch., p. 95.
1856. *Arca granosa* and *A. corbicula* Hanley in Wood, Ind. Test., p. 55, pl. IX, figs. 18, 22.
1857. *Arca* (*Anomalocardia*) *granosa* Adams, H. & A., Gen. Rec. Shells, II, p. 536.
1860. *Arca cuneata* and *A. granosa* Reeve, Elem. Conch., II, p. 93.
1866. *Anomalocardia oblonga* Dunker, Cat. Mus. Godeffroy, V, p. 174.
1867. *Arca granosa* Mitchell, Cat. Mus. Madras, p. 73.
1869. *Arca granosa* Lischke, Japan. Meeresconch., I, p. 145.
1869. *Anomalocardia granosa* Frauenfeld, Abhandl. Zool.-bot., Ges. Wien, XIX, p. 886.
1869. *Anomalocardia granosa* Dunker, Cat. Mus. Godeffroy, IV, p. 114.
1874. *Anomalocardia granosa* Dunker, Cat. Mus. Godeffroy, V, p. 174.
1880. *Arca* (*Anadara*) *cuneata* von Martens, Möbius Beiträg. Meeresf. Mauritius Seychell., p. 320.
1882. *Anomalocardia granosa* Dunker, Ind. Moll. Mar. Japon., p. 233.
1885. *Arca granosa* de Morgan, Bull. Soc. Zool. France, X, p. 366.
1886. *Arca* (*Anadara*) *granosa* Fischer, P., Man. Conchyliol., p. 975, pl. XVII, fig. 10.
1887. *Arca* (*Anadara*) *granosa* Von Martens, Journ. Linn. Soc. London, (Zool.), XXI, p. 207.
1888—1891. *Arca* (*Anomalocardia*) *granosa*, *A.* (*A.*) *oblonga*, *A.* (*A.*) *cuneata* and *A.* (*Barbatia*) *corbicula* Kobelt in Martini, Chemn. Conch.-Cab., (N. F.), VIII (2), *Arca*, p. 38, pl. III, fig. 7; p. 103, pl. XXVII, figs. 7, 8; p. 194, pl. XLVII, fig. 1; p. 210, pl. III, figs. 8—10.
1889. *Arca granosa* Morlet, Journ. Conchyliol., XXXVII, p. 162.
1890. *Anomalocardia cuneata*, *A. granosa* and *A. oblonga*, Paetel, Cat. Conch. Samm. III, p. 215.
1891. *Arca* (*Anadara*) *granosa* Fischer P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 215.
1893. *Arca granosa* Melvill & Abercrombie, Mem. Manchester Lit. Phil. Soc., (4) VII, pp. 5, 27.
1895. *Arca* (*Anomalocardia*) *granosa* Pilsbry, Cat. Mar. Moll. Japan, p. 149.
1896. *Arca granosa* Casto de Elera, Cat. sist. Filip.. p. 801.
1904. *Arca granosa* Lamy, Journ. Conchyliol., LII, p, 158.
1905. *Arca* (*Anomalocardia*) *granosa* Dautzenberg & Fischer, Journ. Conchyliol., LIII, p. 193.
1906. *Arca* (*Anomalocardia*) *granosa* Melvill & Standen, Proc. Zool. Soc. London, p. 796.
1906. *Arca granosa* Owston, Japan. Loochooan Shells, p. 33.
1907. *Arca* (*Anadara*) *granosa* Lamy, Journ. Conchyliol., LV, p. 210.
1909. *Arca* (*Anadara*) *granosa* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 118.
1909. *Arca* (*Anadara*) *granosa* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 467.
1910. *Arca granosa* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Arca* (*Anadara*) *granosa* Pelseneer, "Siboga" Lamellibranchia (Anat.), pp. 9, 14.

1916. *Arca* (*Anadara*) *granosa* Annandale & Kemp, Mem. Ind. Mus., V, p. 350.
1917. *Arca granosa* Odhner, Kungl. Sv. Akad. Handl. LII (N⁰ 16), p. 8.
1918. *Arca granosa* Annandale, Mem. Asiat. Soc. Bengal, VI, p. 318.
1925. *Arca* (*Scapharca*) *granosa* Oostingh, Comm. Geol. Inst. Agri. Univ. Wageningen, N⁰ 9, p. 235.

Lamy dealt with the synonymy of this variable species in detail; I have carefully checked his conclusions and the synonymy given above represents the views of the earlier authors in reference to this form. The species is widely distributed in the Indo-Pacific Area and often occurs in estuarine areas: in such localities it has so far been recorded from the Chilka Lake, the Gangetic Delta, Bassein River, India and Burma; Singapore, Malay Peninsula; various localities in the Sunda Islands; and China.

Distribution: — *A. granosa* has been recorded from Japan in the north to Timor in the south and westwards from the Malay Peninsula along the coasts of India to Bombay.

In the "Siboga" collection it is represented by a single right valve (50 mm. long) from the Bay of Labuan Tring, West Coast of Lombok (St. 19), a shell from Coral Slope in the Bay of Bima (St. 47^b) and a young shell from Buton Strait (St. 207).

6. *Arca* (*Anadara*) *lischkei* (Dunker).

1868. *Anomalocardia Lischkei* Dunker, Novitat. Conch. Moll. Mar., p. 115, pl. XXXVIII, figs. 14—16.
1890. *Anomalocardia Lischkei* Paetel, Cat. Conch. Samm., III. p. 215.
1891. *Arca* (*Anomalocardia*) *Lischkei* Kobelt in Martini Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, p. 185, pl. XLV, figs. 7, 8.
1906 *Arca lischkei* Owston, Japan. Loochooan Shells, p. 33.
1907. *Arca* (*Anadara*) *Lischkei* Lamy, Journ. Conchyliol., LV, p. 243.
1911. *Arca* (*Anadara*) *Lischkei* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 9, 12, 14.

A. lischkei, as Lamy has pointed out, appears to be closely allied to *A. cornea* Reeve. It is distinguished by its oblique, greatly inflated shells having 29—30 radial ribs, which are almost smooth on the right and markedly ridged on the left valve; the umbones are prominent and greatly curved inwards and forwards. I agree with Lamy (Op. cit., pp. 246, 247) that the Sydney Mud-cockle figured by Hedley [1]) under this name is *A. trapezia* Deshayes.

Distribution: — The species was described by Dunker from shells of unknown habitat. Lamy referred a shell from the Andamans to this species.

In the "Siboga" collection there is a complete shell (Length 57 mm., height 46.5 mm., diameter 45.8 mm.) from the Anchorage off Beo, Karakelang Island (St. 131) and a right valve from the Bay of Labuan Tring, West Coast of Lombok (St. 19).

7. *Arca* (*Anadara*) *ehrenbergi* (Dunker).

1817. *Arche* Savigny, Descr. Egypt. Moll., pl. X, figs. 9, 1—3.
1827. *Arca antiquata* Audouin (non Linn.), Expl. des pl. de Savigny, p. 203.
1865. *Arca sp.* Vaillant, Journ. Conchyliol., XIII, p. 116.
1868. *Anomalocardia Ehrenbergi* Dunker, Novitat. Conch., Moll. Mar., p. 116, pl. XXXVIII, figs. 17, 18.
1869. *Arca* (*Anomalocardia*) *Ehrenbergi* Issel, Malacol. Mar. Rosso, pp. 91, 258.
1871. *Arca Pharaonis* Fischer, P., Journ. Conchyliol., XIX, p. 213.

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[1]) Hedley, C. — Proc. Linn. Soc. N. S. Wales, XXIX, p. 203, pl. IX, figs. 29—34 (1904).

1888. *Anomalocardia Ehrenbergi* Jousseaume, Mem. Soc. Zool. France, I, p. 214.
1889—91. *Arca (Anomalocardia) Ehrenbergi* and *A. pharaonis* Kobelt in Martini, Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, p. 92, pl. XXV, figs. 5, 6: and p. 225.
1890. *Anomalocardia Ehrenbergi* Paetel, Cat. Conch. Samm., III, 215.
1890. *Anomalocardia Ehrenbergi* Vassel, Bull. Soc. Hist. Nat. d'Autun, III, p. 26.
1903. *Arca Ehrenbergi* Lamy, Journ. Conchyliol., LI, p. 323.
1907. *Arca (Anadara) Ehrenbergi* Lamy, Journ. Conchyliol., LV, p. 226.
1917. *Arca (Anadara) Ehrenbergi* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 109.
1919. *Arca ehrenbergi* Odhner, Ark. Zool., XII, N⁰ 6, p. 7.
1926. *Arca (Anadara) Ehrenbergi* Pallary, Mem. Inst. Egypt., XI, p. 113, pl. XIV, figs. 9, 1—3.
1929. *Arca (Anadara) Ehrenbergi* Dautzenberg, Faun. Colon. Francais., III, Fasc. IV, p. 580.

I have nothing to add to the detailed descriptions of this species by DUNKER and KOBELT and the additional notes regarding its relationships and synonymy by LAMY. The outline of the shells, which I refer to this species, is oblong-ovate; they are of a dirty white colour, and the number of radial ribs on them is 27—28. The largest specimen in the "Siboga" collection is 38 mm. long.

Distribution: — *A. ehrenbergi* was hitherto known from the Red Sea and Madagascar.

The "Siboga" Expedition obtained shells from the following localities: — Madura Strait (St. 2), Molo Strait (St. 51), Bay of Nangamessi, Sumba (St. 53), St. 320 (6° 5′ S., 114° 7′ E.) and the straits of Macassar.

8. *Arca (Anadara) dautzenbergi* Lamy.

1907. *Arca (Anadara)* Dautzenbergi, Lamy, Journ. Conchyliol., LV, p. 232, pl. III, figs. 9—11.
1909. *Arca dautzenbergi* Hedley, Proc. Linn. Soc. N. S. Wales, XXXIV, p. 422.

LAMY's description of the species is very detailed and the only point of interest to note about the specimens from the Dutch East Indies is that almost all the ridges are divided by a fine median furrow running almost to the umbonal region; the ridges further are granulated.

Distribution: — This interesting species was described by LAMY from a specimen from New Caledonia, and HEDLEY later recorded it from off the Coast of Queensland, Australia.

In the "Siboga" collection *A. dautzenbergi* is represented by a number of odd valves, mostly bleached shells from the following Stations: — Bay of Bima, 55 metres (St. 47), Bay of Badjo, West of Flores (St. 50), West of Kwandang Bay entrance (St. 116), Waru Bay, north of Ceram (St. 174), and Kei Islands (St. 260).

9. *Arca (Anadara) tricenicosta* Nyst.

1844. *Arca radiata* Reeve (non Sowerby), Conch. Icon., *Arca*, II, pl. VI, fig. 40.
1848. *Arca tricenicosta* Nyst, Mém. Acad. Roy. Belgique, XXII, p. 74.
1857. *Arca (Anomalocardia) radiata* Adams, H. & A., Gen. Rec. Moll., II, p. 536.
1860. *Arca radiata* Reeve, Elem. Conch., II, p. 93.
1869. *Anomalocardia radiata* Frauenfeld, Abhand. Zool.-Bot. Ges. Wien, XIX, p. 886.
1882. *Scapharca Philippiana* Dunker (non Nyst), Ind. Moll. Mar. Japon, p. 235.
1888. *Anomalocardia radiata* Jousseaume, Mém. Soc. Zool. France, I, p. 214.
1889. *Arca (Scapharca) Philippiana* Kobelt in Martini, Chemn. Conch. Cab. (N. F.), VIII (2); *Arca*, p. 90, pl. XXV, figs. 1, 2.
1890. *Anomalocardia radiata* Paetel, Cat. Conch. Samm., III, p. 215.
1907. *Arca (Anadara) radiata* Lamy, Journ. Conchyliol., LV, p. 231.
1911. *Arca (Anadara) radiata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 14.

In view of the name *Arca radiata* having been used by SOWERBY in 1840[1]) for a fossil species, NYST changed the name of REEVE's species to *Arca tricenicosta* in 1848. DUNKER apparently was not aware of NYST's work and suggested the name *A. philippiana* for the same species: this name was adopted by KOBELT in his work with some doubt, while LAMY reverted to REEVE's name *A. radiata*.

KOBELT described *A. tricenicosta* in detail and published a figure of one of DUNKER's originals of *A. philippina*. This species does not vary so much in reference to the contour of the shells, but the sculpture is somewhat variable and differs markedly in shells of different sizes.

Distribution: — *A. tricenicosta* has been recorded from China and Japan.

In the "Siboga" collection this species is represented by a number of specimens of different ages from St. 1 (7° 27′.5 S., 113° 8′.5 E.). Anchorage off Djankar, Java (St. 4), Bay of Bima (St. 47), Macassar (St. 71), West of Kwandang Bay entrance (St. 116), Wunoh Bay (St. 152), Waru Bay, north of Ceram (St. 174), Ambon Anchorage (St. 181), Buton Strait (St. 206), Anchorage off Pasir Pandjang, West Coast of Binongka (St. 220), Anchorage east of Dangar Besar, Saleh Bay (St. 313), and St. 318 (6° 36′.5 S., 114° 55′.5 E.).

10. *Arca* (*Anadara*) *pilula* Reeve.

1843. *Arca pilula* Reeve, Conch. Icon., II, *Arca*, pl. II, fig. 8.
1844. *Arca pilula* Reeve, Proc. Zool. Soc. London, p. 39.
1845. *Arca pilula* Catlow & Reeve, Conch. Nomencl., p. 50.
1848. *Arca pilula* Nyst, Mém. Acad. Roy. Belgique, XXII, p. 56.
1857. *Arca* (*Scapharca*) *pilula* Adams, H. & A., Gen. Rec. Moll., II, p. 538.
1860. *Arca pilula* Reeve, Elem. Conch., II, p. 93.
1887. *Arca* (*Anadara*) *pilula* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 208.
1889. *Arca* (*Anomalocardia*) *pilula* Kobelt in Martini Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, p. 108, pl. XXVIII, figs. 7, 8.
1890. *Scapharca pilula* Paetel, Cat. Conch. Samm., III, p. 217.
1896. *Scapharca pilula* Casto de Elera, Cat. Sist. Filip., p. 805.
1905. *Arca pilula* Hidalgo, Cat. Filip., p. 374.
1907. *Arca* (*Cunearca*) *pilula* Lamy, Journ. Conchyliol., LV, p. 275.
1909. *Arca* (*Cunearca*) *pilula*, Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 467.
1910. *Arca pilula* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Arca* (*Cunearca*) *pilula* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 10—12, 14, pl. III, fig. 2.

I can not agree with LAMY that *A. pilula* Reeve is a member of the subgenus *Cunearca* Dall, and in spite of its slightly inequivalve shell I believe that it is a true *Anadara*.

The right valves have in the middle 6—10 ribs smooth, while the anterior and posterior ribs are, like those of the left valve, finely nodulose. The shells collected by the "Siboga" Expedition are all young specimens, and are slightly higher than long. The measurements of one of these specimens are: — Length 14.4 mm., height 15.2 mm., diameter 13.5 mm.

Distribution: — *A. pilula* was described from the Island of Burias, Philippines, and has since been recorded from New Caledonia, Java, Mergui and Ceylon.

In the "Siboga" collection this species is represented by one complete shell and a number of odd valves collected off Djangkar, Java (St. 4).

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1) SOWERBY, G. B. — Trans. Geol. Soc. London, V, p. 2, pl. XXV, fig. 12 (1840).

10. *Arca* (*Anadara*) *birleyana* Melvill.

1907. *Arca* (*Scapharca*) *birleyana* Melvill in Melvill & Standen, Proc. Zool. Soc. London, p. 794, pl. LIII, fig. 8.

I refer a few specimens from the localities enumerated below to this species with some doubt. All these specimens are stray valves of young specimens, not exceeding 9 mm. in length. The outline and the sculpture consisting of large numbers of close-set radial ribs is similar to that of the type, but the ribs are not uniform and in young shells appear somewhat denticulated.

Distribution: — The specimens which I refer to this species were collected by the "Siboga" Expedition in the Bay of Bima (St. 47), Bay of Nangamessi, Sumba (St. 53), West of Kw andang Bay Entrance (St. 116), and at St. 306 (8° 27′ S., 122° 54′.5 E.).

Subgenus **Barbatia** Gray.

1844. *Barbatia* Gray, Synop. Brit. Mus., p. 81.
1847. *Barbatia* Gray, Proc. Zool. Soc. London, p. 198.
1857. *Barbatia* Adams, H. & A., Gen. Rec. Moll., II, p. 534.
1898. *Barbatia* Dall, (ex parte), Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 614.
1907. *Barbatia* Lamy, Journ. Conchyliol., LV, p. 3.
1927. *Barbatia* Cox (ex parte), Rept. Palaeontol. Zanzibar, p. 94.

Though Gray did not characterize *Barbatia* in the first two publications cited above, and the first description of it was not published till 1858, there can be no doubt about its limits. The type of the subgenus is *A.* (*B.*) *barbatia* Linn.

Good definitions of *Barbatia* are given by Adams, Dall and Lamy, and it is only necessary to indicate here that I regard *Acar* Gray as a distinct subgenus of equal rank to *Barbatia*.

1. *Arca* (*Barbatia*) *cometa* Reeve.

1844. *Arca cometa* Reeve, Conch. Icon., II, *Arca*, pl. XVI, fig. 111.
1844. *Arca cometa* Reeve, Proc. Zool. Soc. London, p. 127.
1845. *Arca cometa* Catlow & Reeve, Conch. Nomencl., p. 48.
1848. *Arca cometa* Nyst, Mém. Acad. Roy. Belgique, XXII, p. 18.
1857. *Arca* (*Barbatia*) *cometa* Adams, H. & A., Gen. Rec. Moll., II, p. 534.
1860. *Arca cometa* Reeve, Elem. Conch., II, p. 93.
1890. *Barbatia cometa* Paetel, Cat. Conch. Samm., III, p. 212.
1891. *Arca* (*Acar*) *cometa* Kobelt in Martini Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, p. 190, pl. XLVI, fig. 7.
1896. *Barbatia cometa* Casto de Elera, Cat. Sist. Filip., p. 802.
1905. *Arca Cometa* Hidalgo, Cat. Filip., p. 371.
1907. *Arca* (*Barbatia*) *cometa* Lamy, Journ. Conchyliol., LV, p. 76.
1911. *Arca* (*Barbatia*) *cometa* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 14, pl. II, fig. 3.
1929. *Arca* (*Barbatia*) *cometa* Dautzenberg, Faun. Colon. Francais., III, p. 575.

I agree with Lamy that *Arca cometa* should be placed in the subgenus *Barbatia* and not *Acar*, as Kobelt had done. Lamy pointed out the distinctive features of the species but the following notes on the type of the species in the British Museum (Nat. Hist.), London, should prove useful. The species is small in size, having an elongated shell with a very short anterior side, the umbones situated in about the anterior third of the length, and the sculpture consisting of fine radiating striae, which are developed into widely placed, thick and irregular ridges on the posterior slope behind the umbones.

Distribution: — The species was described from the Philippines and Lamy has recorded it from New Caledonia and Madagascar.

In the "Siboga" collection it is represented by 3 young shells from Taruna Bay, Great Sangir Island (St. 127), and a half grown specimen from Fau-Anchorage, West Coast of Gebe Island (St. 149).

2. *Arca* (*Barbatia*) *decussata* Sowerby.

1819. *Arca trapezina* Lamarck (ex parte), Anim. sans Vertèb., VI, p. 41.
1833. *Byssoarca decussata* Sowerby (non Linn.), Proc. Zool. Soc. London, p. 18.
1841. *Arca trapezina* Delessert, Réc. Coq. Lamarck, pl. XI, fig. 13.
1844. *Arca decussata* and *A. trapezina* Reeve, Conch. Icon., II, *Arca*, pl. XII, fig. 81, pl. XV, fig. 103.
1845. *Arca decussata* Catlow & Reeve, Conch. Nomencl., p. 49.
1848. *Arca decussata* Nyst, Mém. Acad. Roy. Belgique, XII, p. 24.
1853. *Arca stigmosa* Dunker, Ind. Moll. Guin., p. 46, pl. XI, figs. 8—10.
1857. *Arca* (*Barbatia*) *decussata* Adams, H. & A., Gen. Rec. Moll., II, p. 534.
1858. *Arca* (*Byssoarca*) *decussata* Fischer, P., Journ. Conchyliol., VII, p. 339.
1860. *Arca decussata* and *A. trapezina* Reeve, Elem. Conch., II, p. 93.
1863. *Arca decussata* Deshayes, Moll. Réunion, p. 22.
1865. *Arca decussata* Fraser, Proc. Zool. Soc. London, p. 196.
1867. *Arca decussata* Mitchell, Cat. Mus. Madras, p. 73.
1869. *Arca* (*Byssoarca*) *decussata* Lischke, Japan. Meeresconch., I, p. 149.
1869. *Barbatia decussata* Frauenfeld, Abhandl. Zool.-Bot. Ges. Wien, XIX, p. 886.
1869. *Barbatia decussata* Dunker, Cat. Mus. Godeffroy, IV, p. 114.
1870. *Barbatia decussata* and *B. trapezina* Mac Andrew, Ann. Mag. Nat. Hist., (4), VI, p. 449.
1870. *Arca decussata* Fischer, P., Journ. Conchyliol., XVIII, p. 170.
1870. *Barbatia oblonga* and *B. petersi* Dunker, Novitat., Conch., Moll. Mar., p. 107, pl. XXXVIII, figs. 4—7, p. 135, pl. XLV, figs. 5—7.
1871. *Arca decussata* Lischke, Japan. Meeresconch., II, p. 142.
1871. *Arca decussata* Von Martens & Langkavel, Donum Bismarckianum, pp. 55, 57.
1874. *Arca decussata* Lischke, Japan. Meeresconch., III, p. 107.
1874. *Barbatia decussata* Dunker, Cat. Mus. Godeffroy, V, p. 174.
1876. *Arca decussata* Tapparone-Canefri, Viag., "Magenta", p. 242.
1877. *Arca* (*Barbatia*) *decussata* Pagenstecher, Zool. Ergebn. Reise, Rothenmeer. Mollusk, p. 35.
1880. *Arca* (*Barbatia*) *stigmosa* Dohrn, Jahrb. Deutsch. Malakozool. Ges., VII, p. 173.
1880. *Arca* (*Barbatia*) *decussata* and *A.* (*B.*) *trapezina* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 320.
1881. *Barbatia decussata* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 5.
1882. *Barbatia decussata* Dunker, Ind. Moll. Mar. Japon., p. 232.
1886. *Arca decussata* Cooke, Ann. Mag. Nat. Hist. (5) XVIII, p. 93.
1887. *Arca decussata* Von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 207.
1887. *Arca decussata* Cheeseman, Trans. N. Z. Inst., VIII, p. 175.
1888. *Barbatia oblonga* Jousseaume, Mém. Soc. Zool. France, I, p. 213.
1890. *Barbatia decussata*, *B. oblonga*, *B. petersi*, *B. stigmosa* and *B. trapezina* Paetel, Cat. Conch. Samm., III, pp. 213, 214.
1890. *Arca* (*Barbatia*) *decussata* Kobelt in Martini, Chemn. Conch.-Cab., (N. F.) VIII (2), *Arca*, p. 144, pl. XXXVII, figs. 2, 3.
1891. *Arca* (*Barbatia*) *petersi*, *A.* (*B.*) *stigmosa* and *A.* (*B.*) *trapezina* Kobelt, Op. cit., p. 182, pl. XLV, figs. 1, 2; p. 208, pl. XLIX, figs. 4, 5; p. 230, pl. XLVII, fig. 9.
1891. *Arca* (*Barbatia*) *decussata* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 215.

1893. *Barbatia decussata* Stearns, Expl. "Albatross", p. 421.
1895. *Arca* (*Barbatia*) *decussata* Pilsbry, Cat. Mar. Moll. Japan, p. 149.
1896. *Barbatia decussata* Casto de Elera, Cat. sist. Filip., p. 802.
1899. *Barbatia decussata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 185.
1901. *Barbatia decussata* Sturany, Denkschr. Akad. Wiss. Wien, (Math.-Nat.), LXIX, p. 289.
1901. *Barbatia decussata* Fischer, H., Journ. Conchyliol. XLIX, p. 219.
1901. *Barbatia decussata* Suter, Trans. N. Z. Inst., XXXIV, p. 223.
1904. *Arca* (*Barbatia*) *decussata* Lamy, Bull. Mus. d'Hist. Nat. Paris, X, p. 273.
1904. *Arca trapezina* Lamy, Journ. Conchyliol., LII, p. 142, pl. V, figs. 4, 5.
1905. *Arca decussata* and *A. trapezina* Hidalgo, Cat. Filip., pp. 372, 374.
1906. *Arca decussata* Owston, Japan. Loochooan Shells, p. 33.
1906. *Arca* (*Barbatia*) *decussata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 317.
1906. *Barbatia decussata* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 291.
1906. *Barbatia decussata* Dautzenberg, Journ. Conchyliol., LIV, p. 29.
1907. *Barbatia decussata* Suter, Trans. New Zealand Inst., XXXIX, p. 265.
1907. *Arca* (*Barbatia*) *decussata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XIII, p. 153.
1907. *Arca* (*Barbatia*) *decussata* Lamy, Journ. Conchyliol., LV, p. 65.
1909. *Arca* (*Barbatia*) *decussata* Melvill, Trans. Linn. Soc. London, (Zool.), XIII, p. 121.
1909. *Arca* (*Barbatia*) *complanata* Lynge (ex parte, non Chemnitz), D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 111.
1910. *Arca decussata* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1910. *Arca* (*Barbatia*) *decussata* Dautzenberg, Journ. Conchyliol., LVIII, p. 30.
1911. *Arca decussata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 11, pl. II, figs. 8—11, 13; pl. III, figs. 3, 14.
1916. *Arca* (*Barbatia*) *decussata* Boettger, C. R., Abhandl. Senckenberg. Naturf. Gesellsch., XXXVI, p. 307.
1917. *Arca decussata* Thiele, Voeltzkow Reise in Ost-Afrika, III, p. 564.
1917. *Arca* (*Barbatia*) *decussata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXII, p. 131.
1917. *Arca decussata* Odhner, Kungl. Sv. Akad. Handl., LII (N⁰ 16), p. 8.
1923. *Arca* (*Barbatia*) *decussata* Oostingh, Senckenbergiana, V, p. 108.
1929. *Arca* (*Barbatia*) *decussata* and var. *Petersi* Dautzenberg, Faun. Colon. Francais., III, p. 575.

After carefully going through the earlier descriptions and the collections in the Indian Museum, Calcutta, and the Reevian types in the British Museum (Natural History), London, I have come to the conclusion that the limits assigned by LAMY to this species and to *A. nivea* are probably correct, and that LYNGE, while treating *A. lima* as a distinct species, was wrong in uniting *A. velata* with *A. decussata*. I have no doubt that LAMARCK's specimen of *A. trapezina* which was figured by DELESSERT and DUNKER's *A. stigmosa*, *A. oblonga* and *A. petersi* are all to be referred to *A. decussata*.

Distribution: — *A. decussata* is widely distributed in the Indo-Pacific Ocean, and is often found attached to other molluscs.

In the "Siboga" collection it is represented by a fair series of shells from the Bay of Pidjot, Lombok (St. 33), Coral Reef off Labuan Pandan, Lombok (St. 34), Paternoster Island (St. 37), Bay of Bima (St. 47), Corals near the Shore at Pulu Kaniungan (St. 89), Tawi-Tawi Island (St. 93), off North Ubian, (St. 99), off Sawan, Siau Island (St. 125), off Kawio and Kamboling Islands (St. 129), off Beo, Karakelang Islands (St. 131), Wunoh Bay, Waigeu Island (St. 152), Waru Bay, north coast of Ceram (Stat. 174), South of Lucipara group (St. 225^c), Ambon Anchorage (St. 231), off Kilsuin, Kur Island (St. 250), Tual Anchorage, Kei Island (St. 258), Elat, West coast of Great Kei Island (St. 261), Kulewatti Bay, Dammer Island (St. 277), near Timor (St. 282), Reef at Sapeh Bay (St. 311) and east of Dangar Besar, Saleh Bay (St. 313).

3. *Arca* (*Barbatia*) *decussata* Sowerby var. *lima* Reeve.

1844. *Arca lima* Reeve, Conch. Icon., II, *Arca*, pl. XV, fig. 101.
1844. *Arca lima* Reeve, Proc. Zool. Soc. London, p. 125.
1847. *Arca granulata* Philippi, Abbild. Beschreib. Conch., III, p. 114, *Arca*, pl. VI, fig. 3.
1848. *Arca Griffithiana* Nyst., Mém. Acad. Roy. Belgique, XXII, p. 34.
1857. *Arca* (*Barbatia*) *lima* Adams, H. & A., Gen. Rec. Moll., II, p. 535.
1860. *Arca lima* Reeve, Elem. Conch., II, p. 93.
1865. *Barbatia lima* Angas, Proc. Zool. Soc. London, p. 655.
1884. *Arca* (*Barbatia*) *lima* Smith, Rep. Voy. "Alert", p. 110.
1885. *Arca* (*Barbatia*) *lima* Smith, "Challenger" Lamellibranchia, p. 260.
1889. *Arca* (*Barbatia*) *lima* and *A.* (*B.*) *granulata* Kobelt in Martini, Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, p. 115, pl. XXX, figs. 5, 6, p. 116, pl. XXX, figs. 7, 8.
1891. *Arca* (*Barbatia*) *lima* Smith, Proc. Zool. Soc. London, p. 431.
1896. *Barbatia lima* Casto de Elera, Cat. Sist. Filip., p. 803.
1898. *Barbatia lima* Melvill & Standen, Journ. Conch., IX, p. 81.
1899. *Barbatia lima* Melvill & Standen, Journ. Linn. Soc. London, (Zool.), XXVII, p. 185.
1903. *Arca* (*Barbatia*) *lima* Smith, Faun. Geogr. Maldive Laccadive Archipel., II, p. 624.
1904. *Arca helblingi* Lamy (ex parte), Journ. Conchyliol., LV, p. 66.
1906. *Barbatia* (*Barbatia*) *lima* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 291.
1907. *Arca* (*Barbatia*) *decussata* var. *lima* Lamy, Journ. Conchyliol., LV, p. 66.
1909. *Arca* (*Barbatia*) *lima* Lynge (ex parte), D. Kgl. Dansk. Vidensk., Skr. Nat.-Math., (7) V, p. 113.
1917. *Arca* (*Barbatia*) *lima* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 31.

A single specimen collected from Sapeh Bay, east coast of Sumbawa (St. 311) agrees so closely with the type of *A. lima* Reeve, that I have no hesitation in referring it to that species. In reference to whether the form *lima* is distinct from or only a variety of *A. decussata* I have followed Lamy, as I have not enough material to settle this question.

4. *Arca* (*Barbatia*) *grayana* Dunker.

1868. *Arca Grayana* Dunker, Novitat. Conch., Moll. Mar., p. 92, pl. XXXI, figs. 5—7.
1869. *Barbatia Grayana* Dunker, Cat. Mus. Godeffroy, IV, p. 114.
1889. *Arca* (*Barbatia*) *Grayana* Kobelt, in Martini Chemn., Conch. Cab., (N. F.), VIII, (2), *Arca*, p. 129, pl. XXXIII, figs. 7, 8.
1890. *Barbatia grayana* Paetel, Cat. Conch. Samm., III, p. 213.
1907. *Arca Grayana* Lamy, Journ. Conchyliol., LV, p. 68.
1911. *Arca Grayana* Pelseneer, "Siboga" Lamellibranches (Anat.), pl. II, fig. 1.

Lamy when writing his revision of the family had apparently no specimens of this interesting species for he makes only a passing reference to it in his account of *A. decussata*. Dunker published a good description and figures of the species, but only gave the rather indefinite habitat — Indian Ocean — for it.

The "Siboga" collection contains 4 shells, which I refer to Dunker's species and the following notes on them should prove useful for the identification of the species hereafter.

The shell is oblong, somewhat compressed, solid, slightly inequilateral, rounded anteriorly, subtruncated posteriorly, ventral margin straight or sometimes arched upwards. The sculpture consists of very closely placed rounded to rhomboidal nodules formed by the intercrossing of the fine radial and concentric ribs which run very closely and regularly over the entire surface;

some of the radial ribs are more marked and prominent. All the specimens are without the lamellose epidermis. The measurements (in millimetres) of the shells are: —

Length	19.5	21	25.8
Height.	10.8	11.9	13.3
Diameter	8.9	8.8	10.6

Distribution: — The "Siboga" Expedition collected specimens of this species at St. 49 (8° 20′.5 S., 119° 4′.5 E.), in Du-roa Strait, Kei Island (St. 257) and St. 310 (8° 30′ S., 119° 7′.5 E.).

5. *Arca* (*Barbatia*) *paulucciana* Tapperone-Canefri. (Plate I, figs. 58, 59).

1875. *Barbatia Paulucciana* Tapparone-Canefri, Ann. Mus. Civ. Stor. Nat. Genova, IX, p. 292.

I do not agree with Lamy [1]) that Tapparone-Canefri's species *A. paulucciana* from New Guinea is based on specimens of *A. nivea*. There are in the "Siboga" collection a single left valve dredged on the bank between the islands of Bahuluwang and Tambolungan, South of Saleyer (St. 66) and 2 shells collected at Anchorage near Seget, West entrance to Selee Strait (St. 163), which agree in all particulars with the description of *A. paulucciana* by Tapparone-Canefri. A very young shell dredged at Banda Anchorage (St. 240) is also to be referred to this species.

In my opinion the species is more closely allied to *A. decussata* Sow. than to *A. nivea* Dillwyn, and is distinguished by the straight upper margin with very angulated corners, the prominent umbones situated in the anterior half of the shell, and the sculpture consisting of binodulose radial ridges on the greater part of the middle of the shell; on the area behind the carina and in front of the umbonal ridge the ridges bear small, low, ovoidal nodules which give the ridges a moniliform appearance. I figure one of the shells from St. 163.

6. *Arca* (*Barbatia*) *fusca* Bruguière.

1685. *Pectunculus e fusco rufescens* Lister, Hist. Conch., pl. CCXXXI, fig. 65.
1742. *Musculus striatus* etc. Gualtieri, Ind. Test., pl. XC, fig. B.
1784. *Arca bicolorata* Chemnitz, Conch.-Cab., XI, p. 243, pl. CCIV, fig. 2007.
1789. *Arca fusca* Bruguière, Encycloped. Méthod., I, p. 102.
1790. *Arca barbatia* var. γ. Gmelin, Syst. Nat. (ed. XIII), p. 3307.
1798. *Arca amygdalum testum* Röding, Mus. Boltenianum, p. 175.
1802. *Arca fusca* Bosc, Hist. Nat. Coq., III, p. 129.
1817. *Arca bicolorata* and *A. fusca* Dillwyn, Descr. Cat. I, pp. 230, 231.
1819. *Arca fusca* Lamarck, Anim. sans Vertèb., VI, p. 39.
1825. *Arca fusca* Sowerby, Cat. Tankerville, p. 18.
1835. *Arca fusca* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 466.
1843. *Arca fusca* Hanley, Rec. Biv. Shells, p. 154.
1844. *Arca fusca* Reeve, Conch. Icon., II, *Arca*, pl. XII, fig. 82.
1845. *Arca fusca* Catlow & Reeve, Conch. Nomencl., p. 49.
1848. *Arca fusca* Nyst, Mém. Acad. Roy. Belgique, XXII, p. 30.
1849. *Arca cruciata* Philippi, Abbild. Beschreib. Conch. III, p. 87, *Arca*, pl. V, fig. 7.
1853. *Barbatia fusca* Mörch, Cat. Yoldi, II, p. 40.
1857. *Arca* (*Barbatia*) *fusca* Adams, H. & A., Gen. Rec. Moll., II, p. 534.

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1) Lamy, E. — Journ. Conchyliol., LV, p. 64 (1907).

1860. *Arca fusca* Reeve, Elem. Conch., II, p. 93.
1862. *Arca fusca* Chenu, Man. Conchyliol., II, p. 173, fig. 862.
1866. *Arca fusca* Mabille & Le Mesle, Journ. Conchyliol., XIV, p. 118.
1867. *Arca fusca* Mitchell, Cat. Mus. Madras, p. 73.
1869. *Arca fusca* Issel, Malacol, Mar. Rosso, p. 90.
1869. *Barbatia fusca* Dunker, Cat. Mus. Godeffroy, IV, p. 114.
1869. *Barbatia fusca* Frauenfeld, Abhandl. Zool.-Bot. Ges. Wien, XIX, p. 886.
1874. *Barbatia fusca* Dunker, Cat. Mus. Godeffroy, V, p. 173.
1879. *Arca fusca* von Martens, Monatsb. Kais. Akad. Wiss. Berlin, p. 741.
1880. *Arca* (*Barbatia*) *fusca* von Martens, Möbius Beiträg. Meeresfor. Mauritius, Seychell, p. 319.
1884. *Arca fusca* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 802.
1885. *Arca* (*Barbatia*) *fusca* Smith, "Challenger" Lamellibranchia, p. 260.
1887. *Arca* (*Barbatia*) *fusca* von Martens, Journ. Linn. Soc. London, (Zool.), XXI, p. 207.
1888. *Arca* (*Barbatia*) *fusca* Kobelt, in Martini, Chemn. Conch.-Cab., (N. F.), VIII (2), *Arca*, p. 18, pl. IV, fig. 2, pl. VI, figs. 5, 6.
1890. *Arca fusca* Paetel, Cat. Conch. Samm., III, p. 212.
1890. *Arca fusca* Vassel, Bull. Soc. Hist. Nat. d'Autun, III, p. 26.
1891. *Arca* (*Barbatia*) *fusca* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 214.
1896. *Arca fusca* Casto de Elera, Cat. Sist. Filip., p. 803.
1898. *Arca fusca* Melvill & Standen, Journ. Conch., IX, p. 81.
1899. *Arca fusca* Melvill & Standen, Journ. Linn. Soc. London, (Zool.), XXVII, p. 185.
1901. *Barbatia fusca* Sturany, Denkschr. Kais. Akad. Wien. Math.-Nat., LXIX, p. 289.
1905. *Arca fusca* Hidalgo, Cat. Filip., p. 372.
1906. *Barbatia* (*Barbatia*) *fusca* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 291.
1906. *Arca fusca* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 463.
1907. *Arca* (*Barbatia*) *fusca* Lamy, Journ. Conchyliol., LV, p. 53.
1909. *Arca* (*Barbatia*) *fusca* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 111
1910. *Arca* (*Barbatia*) *fusca* Dautzenberg, Journ. Conchyliol., LVIII, p. 30.
1910. *Arca fusca* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Arca fusca* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 9, 12—15, pl. III, figs. 6—10.
1917. *Arca* (*Barbatia*) *fusca* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 28.
1929. *Arca* (*Barbatia*) *fusca* Dautzenberg, Faun. Colon. Francais., III, p. 575.
1930. *Arca* (*Barbatia*) *fusca* Thiele, Faun. Südwest Austral., V, p. 589.

Arca fusca is a widely distributed species in the Indian Ocean and its distribution extends to the Red Sea in the Northwest, Madagascar in the South and through the Sunda Islands to Australia, New Caledonia and New Zealand in the Pacific Ocean. I agree with LAMY that *A. cruciata* Philippi is a synonym of BRUGUIÈRE's species, but the shells in the "Siboga" collection, which agree with the description and figure of *rodatzi* Dunker, have constrained me to separate them as a distinct variety.

Distribution: — In addition to the localities noted by LAMY and LYNGE for *A. fusca*, the following records of the species from the "Siboga" collection should prove useful: Bay of Badjo, West of Flores (St. 50), Bay of Nangamessi, Sumba (St. 53), Anchorage off Seba (St. 58), South of Saleyer (St. 66), Pulu Sebangkatan, Borneo Bank (St. 81), St. 105 (6° 8′ N., 121° 19′ E.), Anchorage off Lirung Salibabu Island (St. 133), Anchorage off Laiwui (St. 142), Fau Anchorage (St. 149), Banda Anchorage (St. 240), Anchorage off Kilsuin, West Coast of Kur Island (St. 250), St. 251 (5° 28′.4 S., 132° 0′.2 E.), Pepela Bay, east of Rotti Island (St. 301) and a number of dead shells from Ambon. The largest specimen in the collection is 58 mm. long and 32 mm. high.

7. *Arca* (*Barbatia*) *fusca* Bruguière, var. *rodatzi* Dunker.

1795. *Arca bicolorata* Chemnitz, Conch.-Cab., XI, p. 243, pl. CCIV, fig. 2007.
1848. *Arca bicolorata* Nyst, Mém. Acad. Roy. Belgique, XXII, p. 12.
1858. *Barbatia rodatzi* Dunker, Novitat. Conch., Moll. Mar., p. 89, pl. XXIX, figs. 1—3.
1889. *Arca* (*Barbatia*) *rodatzi* Kobelt in Martini Chemn. Conch.-Cab., (N. F.), VIII (2), *Arca*, p. 125, pl. XXXII, figs. 3, 4.
1907. *Arca* (*Barbatia*) *fusca* (ex parte), Lamy, Journ. Conchyliol., LV, pp. 53, 54.
1911. *Arca* (*Barbatia*) *Rodatzi* Pelseneer, "Siboga" Lamellibranches, (Anat.), p. 13.

The ovate-oblong and less regular outline, the almost white inner colour of the shells which is bordered by a narrow brown band only along the margin in the posterior part of the shell and somewhat narrower hinge, are sufficient to distinguish Dunker's form as a variety distinct from the typical form of *A.* (*B.*) *fusca*.

Distribution: — Dunker described this form from the coast of Zanzibar.

In the "Siboga" collection it is represented from St. 105 (6° 8′ N., 121° 19′ E.), Anchorage off Lirung, Salibabu Island (St. 133), Wunoh bay (St. 152), Anchorage off Noimini, South Coast of Timor (St. 296) and St. 310 (8° 30′ S., 119° 7′.5 E.).

8. *Arca* (*Barbatia*) *obtusoides* Nyst.

1844. *Arca obtusa* (non Philipps) and *A. obliquata* (non Gray) Reeve, Conch. Icon., II, *Arca*, pl. XII, figs. 77, 80.
1844. *Arca obtusa* Reeve, Proc. Zool. Soc. London, p. 123.
1845. *Arca obliquata* and *A. obtusa* Catlow & Reeve, Conch. Nomencl., p. 50.
1848. *Arca obtusoides* Nyst, Mém. Acad. Roy. Belgique, XXII, p. 50.
1851. *Arca sinensis* Philippi, Zeitschr. Malakozool., VIII, p. 53.
1860. *Arca obliquata* and *A. obtusa* Reeve, Elem. Conch., II, p. 23.
1869. *Barbatia obtusa* Frauenfeld, Abhandl. Zool.-Bot. Ges. Wien, XIX, p. 886.
1869. *Arca decurvata* Lischke, Malakozool. Blätt., XVI, p. 108.
1869. *Arca decurvata* and *A. obtusa* Lischke, Japan. Meeresconch., I, p. 148.
1882. *Arca decurvata* Dunker, Ind. Moll. Mar. Japon., p. 232.
1890. *Barbatia decurvata* Paetel, Cat. Conch. Samm., III, p. 213.
1891. *Arca* (*Barbatia*) *decurvata* and *A. sinensis* Kobelt in Martini Chemn. Conch.-Cab. (N. F.), VIII (2) *Arca*, p. 120, pl. XXXI, figs. 5, 6, p. 228.
1895. *Arca* (*Barbatia*) *obtusa* Pilsbry, Cat. Mar. Moll. Japan, p. 148.
1907. *Arca* (*Barbatia*) *decurvata*, Lamy, Journ. Conchyliol., LV, p. 73.
1911. *Arca decurvata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 11.

After examination of the type of *A. obtusa* Reeve I have no doubt that it is identical with the form later described as *A. decurvata* by Lischke, and which was based on the species described and figured in "Conchologia Iconica" as *A. obliquata* by Reeve. It may also be noted that Gray's *A. obliquata*, as has been shown by Phillippi, Krauss and others, is quite different from the species figured by Reeve under this name. There can also be no doubt that *A. sinensis* Philippi is also a synonym of this old species. Nyst in 1848 proposed the name *obtusoides* in place of the preoccupied *obtusa*, but the different workers on the family have adopted Lischke's later name *decurvata* in preference to Nyst's earlier *obtusoides*.

Distribution: — *A.* (*B.*) *obtusoides* has so far been recorded from Japan, Korea, China, the Philippines, New Caledonia and Ceylon. In the "Siboga" Collection the species is represented by a single shell taken in the Bay of Labuan Tring, West Coast of Lombok (St. 19).

9. *Arca* (*Barbatia*) *parva* (Sowerby).

1833. *Byssoarca parva* Sowerby, Proc. Zool. Soc. London, p. 19.
1844. *Arca parva* Reeve, Conch. Icon., II, *Arca*, pl. XVII, fig. 119.
1845. *Arca parva* Catlow & Reeve, Conch. Nomencl., p. 50.
1848. *Arca parva* Nyst, Mém. Acad. Roy. Belgique, XXII, p. 52.
1857. *Arca* (*Barbatia*) *parva* Adams, H. & A., Gen. Rec. Moll., II, p. 535.
1860. *Arca parva* Reeve, Elem. Conch., II, p. 93.
1870. *Arca parva* Mac Andrew, Ann. Mag. Nat. Hist., (4) VI, p. 449.
1874. *Arca parva* Dunker, Cat. Mus. Godeffroy, V, p. 178.
1886. *Arca parva* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 93.
1890. *Barbatia* (*Acar*) *parva* Paetel, Cat. Conch. Samm., III, p. 214.
1891. *Arca* (*Barbatia*) *parva* Kobelt in Martini, Chemn. Conch.-Cab., (N. F.), VIII (2), *Arca*, p. 197, pl. XLVII, fig. 7.
1904. *Arca* (*Barbatia*) *parva* Lamy, Bull. Mus. d'Hist. Nat. Paris, X, p. 272.
1906. *Arca* (*Barbatia*) *parva* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 317.
1907. *Arca* (*Barbatia*) *parva* Lamy, Journ. Conchyliol., LV, p. 51.
1909. *Arca* (*Barbatia*) *parva* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 114.
1909. *Arca* (*Barbatia*) *parva* Lamy, Mém. Soc. Zool. France, XXII, p. 335.
1911. *Arca* (*Barbatia*) *parva* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 15.
1917. *Arca* (*Barbatia*) *parva* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 27.
1929. *Arca* (*Barbatia*) *parva* Dautzenberg, Faun. Colon. Francais., III, p. 576.

I have nothing to add to Kobelt's detailed description of this species, but agree with Lamy that it is not possible to unite it with Lamarck's *A. pistachia*. It is a very beautiful, small-sized species, with an ovate-oblong shell having numerous radiating and concentric striae cutting off the ridges into closely spaced granules of squarish or rectangular shape.

Distribution: — *A.* (*B.*) *parva* has been recorded from the Gulf of Suez, the Red Sea, Madagascar, Persian Gulf, Gulf of Siam, Tahiti, Ducie's Island etc.

In the "Siboga" collection it is represented by young stray valves not exceeding 10 mm. in length from the Bay of Kankamaraan (St. 16), Bay of Labuan Tring, West coast of Lombok (St. 19), Bay of Pidjot, Lombok (St. 33), Paternoster Islands (St. 37), St. 43^b (7° 15′.5 S., 118° 12′.3 E.), Bay of Nangamessi, Sumba (St. 53), Bank between islands of Bahuluwang and Tambolungan, south of Saleyer (St. 66), Tawi-Tawi Islands, Sulu Archipelago (St. 93), St. 98 (6° 9′ N., 120° 21′ S.), St. 164 (1° 42′.5 S., 130° 47′.5 E.), Anchorage off Pasir Pandjang (St. 220) and Macassar.

10. *Arca* (*Barbatia*) *radula* Smith.

1885. *Arca* (*Barbatia*) *radula* Smith, "Challenger" Lamellibranchia., p. 260, pl. XVII, figs. 3—3b.
1891. *Arca* (*Barbatia*) *radula* Kobelt in Martini Chemn. Conch.-Cab., (N. F.), VIII (2), *Arca*, p. 219.
1907. *Arca* (*Barbatia*) *fasciata* var. *radula* Lamy, Journ. Conchyliol., LV, p. 50.

Smith was the first author to publish a description and figures of the species, and there is no reason whatsoever why the name of the author of the species should be *A. Adams* instead of Smith. *A.* (*B.*) *radula*, as Smith pointed out, is closely allied to *A. parva*, and I can not agree that it is a variety of *A. fasciata* Reeve.

Distribution: — *A.* (*B.*) *radula* had so far been recorded from South Australia. In the "Siboga" collection there is a single specimen from near the Kei Islands (St. 260) which, after comparison with Smith's types, I assign to this species.

11. *Arca* (*Barbatia*) *wendti* Lamy. (Plate I, figs, 60, 61).

1874. *Barbatia Wendtii* Dunker, Cat. Mus. Godeffroy, V, p. 173.
1877. *Barbatia Wendtii* Dunker, Cat. Mus. Godeffroy, VI, p. 96.
1890. *Barbatia* (*Acar*) *Wendti* Paetel, Cat. Conch. Samm., III, p. 214.
1907. *Arca Wendti* Lamy, Journ. Conchyliol., LV, p. 45, pl. 1, figs. 11—13.
1909. *Arca wendti* Hedley, Proc. Linn. Soc. N. S. Wales, XXXIV, p. 423.
1910. *Arca wendti* Hedley, Austral. Ass. Adv. Sci.. XII, p. 344.

Neither SCHMELTZ nor DUNKER ever published any description of the species *A.* (*B.*) *wendti* and the name was a nomen nudum till LAMY referred some shells from the Island of Elizabeth (?) and from New Caledonia to it, and published a detailed description and figures of it. LAMY included the species in the subgenus *Arca s.s.* with some doubt. Later Hedley recorded this species from the Australian waters. In the "Siboga" collection there are a number of shells from the localities enumerated below, and which agree with a shell named *A. wendti* by HEDLEY and now in the collections of the British Museum (Nat. Hist.), London. I am further of opinion that it is a true *Barbatia*. I publish photographs of a shell of the species.

Distribution: — The "Siboga" shells of this species were obtained off Labuan Pandan, Lombok (St. 34) and on the Borneo Bank (St. 80).

12. *Arca* (*Barbatia*) *weberi* sp. nov. (Plate I, figs. 62, 63).

The following is a description of this new species, which I associate with the name of Prof. MAX WEBER, the leader and guiding light of the "Siboga" Expedition: —

Shell medium sized, elongated, subtrapezoidal, somewhat compressed, thin; dorsal and ventral margins subparallel; anterior margin sub-rounded; posterior margin truncated above, acutely extended below; umbos relatively low, broad, lying at about anterior third of length; posterior ridge distinct, but not very prominent; region behind ridge somewhat excavated with two well-marked radial ridges; radial sculpture consisting of 27—28 narrow, low, regular ribs, some of the ribs are grooved and a few interspaces bear narrower secondary ribs, more particularly near the margin; interspaces very narrow, thread-like; concentric sculpture consisting of very thin, not very deep growth lines and furrows which cut up the radial ridges into circular to ovoidal beak-like areas; sculpture better marked on left than on right valve; cardinal area moderately narrow, bearing transverse striations; inner margin of valves particularly along anterior and posterior regions fluted.

Length 18.8 mm.: height 9.4 mm.: diameter 5.6 mm.: length of hinge 10.4 mm.

Holotype: A complete shell dredged from a depth of 32 metres, $1^1/_2$ miles south of Tandjong Lajar, South coast of Bawean Island (St. 322).

Remarks: — *A.* (*B.*) *weberi* is distinguished by its shape and very peculiar sculpture. In general form it resembles *A.* (*B.*) *cometa* Reeve, but the sculpture is less prominent, though much more regular: the shell valves are also much thinner.

Subgenus **Acar** Gray.

1857. *Acar* Gray, Ann. Mag. Nat. Hist., (2) XIX, p. 369.
1857. *Acar* Adams, H. & A., Gen. Rec. Moll., II, p. 535.
1907. *Acar* Lamy, Journ. Conchyliol., LV. p. 3.
1927. *Acar* Cox, Rept. Palaeontol. Zanzibar, p. 94.

Gray proposed *Acar* as a subgenus of *Barbatia* Gray for the three species *A. reticulata* Chemn., *A. divaricata* Sow., and *A. gradata* Brod. & Sow.; he however, did not publish any description of it. H. & A. Adams published a description of *Acar* and referred further species to it, but did not designate any genotype. Lamy, who raised *Acar* to subgeneric rank of same value as *Barbatia* remarked that *A. donaciformis* Reeve had been suggested as the genotype of *Acar*, but this species was rightly included by him in the synonymy of *A. plicata* Dillwyn. Cox followed Woodring [1]) in accepting *A. gradata* Brod. & Sow. as the genotype.

A detailed description of the genus is published in Cox's memoir cited above.

1. *Arca* (*Acar*) *plicata* Dillwyn.

1685. Lister, Hist. Conch., pl. CCXXXIII, fig. 67.
1795. *Arca plicata* Chemnitz, Conch.-Cab., XI, p. 244, pl. CCIV, fig. 2008.
1817. *Arca plicata* Dillwyn, Descr. Cat., I, p. 227.
1817. *Arche* Savigny, Descr. Egypte, pl. X, figs. 6, 1—5.
1819. *Arca irudina* Lamarck, Anim. sans Vertèb., VI, p. 41.
1833. *Arca divaricata* and *A. pusilla* Sowerby, Proc. Zool. Soc. London, p. 18.
1835. *Arca irudina* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 469.
1844. *Arca donaciformis* and *A. divaricata* Reeve, Conch. Icon., II, *Arca*, pl. XVI, figs. 104, 108, 112.
1844. *Arca donaciformis* Reeve, Proc. Zool. Soc. London, p. 125.
1845. *Arca divaricata*, *A. donaciformis*, *A. irudina* and *A. reticulata* Catlow & Reeve, Conch. Nomencl., pp. 49—51.
1847. *Arca clathrata*, *A. divaricata*, *A. donaciformis*, *A. irudina*, *A. plicata*, *A.* (*Barbatia*) *pusilla* and *A. reticulata* Nyst, Mém. Acad. Roy. Belgique, XXII, pp. 18, 26, 38, 56, 58, 60.
1848. *Arca squamosa* and *A. rosea* Krauss, Südafr. Moll., p. 16.
1856. *Arca plicata* Hanley in Wood, Ind. Test., p. 54, pl. IX, fig. 6.
1857. *Arca* (*Acar*) *divaricata* and *A.* (*A.*) *donaciformis* Adams, H. & A., Gen. Rec. Moll., II, p. 535.
1860. *Arca divaricata* and *A. Donaciformis* Reeve, Elem. Conch., II, p. 93.
1862. *Arca donaciformis* Chenu, Man. Conchyliol., II, p. 173, fig. 863.
1865. *Arca* (*Acar*) *laminata* Angas, Proc. Zool. Soc. London, pp. 655, 697.
1870. *Arca* (*Acar*) *plicata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 449.
1871. *Arca divaricata* Fischer, P., Journ. Conchyliol., XIX, p. 214.
1871. *Arca divaricata* von Martens & Langkavel, Donum Bismarck., pp. 65, 67.
1871. *Arca domingensis* (non Lamarck, ex parte) Lischke, Japan. Meeresconch., II, p. 142.
1874. *Arca domingensis* Lischke, Japan. Meeresconch., III, p. 107.
1878. *Arca MacCoyi* Tenison-Woods, Proc. Roy. Soc. Victoria, XIV, p. 61.
1880. *Arca plicata* Dohrn, Jahrb. Deutsch. Malakozool. Ges., VII, p. 175.
1880. *Arca* (*Acar*) *divaricata* and *A.* (*A.*) *donaciformis* von Martens, Möbius Beiträg. Meeresf. Mauritius Seychell., p. 320.
1881. *Acar gradata* de Rochebrune (non Broderip & Sowerby), Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) III, p. 249.
1882. *Arca Domingensis* (non Lamarck), Dunker, Ind. Moll. Mar. Japon., p. 233.
1884. *Arca* (*Acar*) *Donaciformis* Tryon, Struct. Syst. Conch. III, p. 254, pl. CXXVI, fig. 41.
1886. *Arca* (*Acar*) *plicata* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 94.
1888. *Arca divaricata* Jousseaume, Mém. Soc. Zool. France, I, p. 214.
1890. *Barbatia* (*Acar*) *divaricata*, *B.* (*A.*) *donaciformis*, *B.* (*A.*) *laminata*, *B.* (*A.*) *pusilla* and *B.* (*A.*) *reticulata* Paetel, Cat. Conch. Samm., III, pp. 213, 214.
1890. *Barbatia* (*Acar*) *divaricata* Kobelt in Martini Chemn. Conch. Cab. (N. F.) VIII (2), *Arca*, p. 111, pl. XXIX, figs. 6—9.

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1) Woodring, W. P. — Miocene Molluscs from Bowden, Jamaica. Pelecypods and Scaphopods, Carnegie Inst. Washington, N⁰ 366, pp. 36, 37 (1925).

1891. *Barbatia* (*Acar*) *donaciformis* and *B.* (*A.*) *plicata* Kobelt, op. cit. p. 188, pl. XLVI, fig. 5 and p. 195, pl. XLVII, fig. 5.
1891. *Barbatia* (*Acar*) *domingensis* Smith, Proc. Zool. Soc. London, p. 431.
1894. *Arca* (*Acar*) *plicata* Henn, Proc. Linn. Soc. N. S. Wales, (2) IX, p. 180.
1895. *Arca* (*Barbatia*) *domingensis* Pilsbry, (non Lamarck), Cat. Mar. Moll. Japan, p. 149.
1897. *Arca plicata* Watson, Journ. Linn. Soc. London (Zool.), XXVI, p. 273.
1897. *Arca divaricata* Sowerby, Mar. Shells S. Africa, Suppl., p. 27.
1898. *Barbatia* (*Acar*) *pusilla* Melvill & Standen, Journ. Conch., IX, p. 81.
1899. *Barbatia* (*Acar*) *divaricata* and *B.* (*A.*) *domingensis* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 186.
1900. *Arca* (*Acar*) *domingensis* Dautzenberg, Mém. Soc. Zool. France, XIII, p. 236.
1900. *Arca squamosa* B. Newton, Geol. Mag., VII, p. 546.
1901. *Barbatia divaricata* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 289.
1902. *Barbatia Domingensis* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1904. *Barbatia squamosa* Pritchard & Gatliff, Proc. Roy. Soc. Victoria, XVII, p. 241.
1904. *Arca squamosa* Lamy, Journ. Conchyliol., LII, p. 142.
1904. *Arca domingensis* Smith (non Lamarck), Ann. Mag. Nat. Hist., (7) XIV, p. 12.
1904. *Arca* (*Acar*) *plicata* Lamy, Bull. Mus. d'Hist. Nat. Paris, X, pp. 274, 275, fig. 1.
1905. *Arca divaricata* Hidalgo, Cat. Filip., p. 372.
1905. *Arca iridina* Lamy, Journ. Conchyliol., LIII, p. 306.
1906. *Arca* (*Acar*) *plicata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 317.
1906. *Arca* (*Acar*) *domingensis* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 253.
1906. *Arca domingensis* Owston, Japan. Loochooan Shells, p. 33.
1906. *Barbatia domingensis* Melvill & Standen, Proc. Zool. Soc. London, p. 796.
1906. *Barbatia* (*Acar*) *gradata* (nec Broderip & Sowerby), Melvill & Standen, op. cit., p. 797.
1907. *Arca* (*Acar*) *plicata* Lamy, Journ. Conchyliol., LV, p. 80.
1907. *Arca* (*Acar*) *plicata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XIII, p. 153.
1909. *Arca* (*Acar*) *plicata* Melvill, Trans. Linn. Soc. London, (Zool.), XIII, p. 122.
1909. *Arca* (*Acar*) *plicata* Lamy, Mém. Soc. Zool. France, XXII, p. 335.
1909. *Arca* (*Acar*) *plicata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math. (7) V, p. 116.
1910. *Arca plicata* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Arca plicata* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 11, 13.
1917. *Arca* (*Acar*) *plicata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 32.
1917. *Arca plicata* Odhner, Kungl. Sv. Akad. Handl., LII (N° 16), p. 21.
1927. *Arca divaricata* Tomlin, Trans. Zool. Soc. London, XXVI, p. 304.
1929. *Arca* (*Acar*) *plicata* Dautzenberg, Faun. Colon. Francais., III, Fasc. IV, p. 577.

There has been a great deal of difference of opinion in reference to the specific limits and range of variation and distribution of the species which was figured without any name by LISTER, but later called *A. plicata* by CHEMNITZ. LISCHKE was the first to confine into a single species the Indo-Pacific with the West Indian and North American forms and in this has been followed by SMITH, LAMY and LYNGE. I, however, agree with COOKE and TOMLIN that there are three well distinguished forms; *A. gradata* Broderip & Sowerby from the West Coast of North America, *A. domingensis* Lamarck from the West Indies and *A.* (*A.*) *plicata* Dillwyn from the Indo-Pacific. The Indo-Pacific form is easily distinguished by its short and stout but not very swollen shell, the much fewer number of ribs, the central area with closely placed ribs, the ribs behind the keep running transversely outwards to the edge, the nodules on the ribs rounded and the ventral margin often distorted.

Distribution: — *A.* (*A.*) *plicata* has a wide distribution in the Indo-Pacific area. It is found as far north as the Gulf of Suez and down south to the Cape of Good Hope; in the Indian Ocean it is found all round the coasts, while in the Pacific Ocean it ranges from Japan in the north, along the Philippines, Sunda Islands, Moluccos, New Caledonia, Australia to New Zealand and South Sea Islands.

In the "Siboga" collection *A.* (*A.*) *plicata* is represented by a fair number of stray valve, collected at Sailus Ketjil, Paternoster Islands (St. 37), Bay of Bima (St. 47), Sapeh Strait (St. 49^a), Western entrance of Samau Strait (St. 59), Borneo Bank (St. 80), St. 90 (1° 17'.5 N., 118° 53' E.), St. 95 (5° 43'.5 N., 119° 40' E.), St. 105 (6° 8' N., 121° 19' E.), Anchorage off Kilsuin, West Coast of Kur Island (St. 250), and Anchorage off Sailus Besar, Paternoster Islands (St. 315). The largest specimen is a left valve from St. 49^a, with the measurements as follows: — Length 28 mm., height 13.8 mm., diameter of single valve 5 mm.

2. *Arca* (*Acar*) *incerta* Smith.

1899. *Arca* (*Barbatia*) *incerta* Smith, Ann. Mag. Nat. Hist., (7) IV, p. 251.
1901. *Arca* (*Barbatia*) *incerta* Smith, Illustr. Zool. "Investigator", pl. XIII, figs. 3, 3*a*.
1904. *Arca* (*Barbatia*) *incerta* Smith, Ann. Mag. Nat. Hist., (7) XIV, p. 12.
1906. *Arca* (*Barbatia*) *incerta* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 253.
1907. *Arca* (*Acar*) *incerta* Lamy, Journ. Conchyliol. LV, p. 96.
1911. *Arca incerta* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 9, 13, 15.

This species though superficially resembling *A. scabra* Poli and *A. nodulosa* Müller, is certainly distinct from either. Smith placed *A. incerta* in the subgenus *Barbatia* Gray, but the greatly trellised sculpture, the subcarinated posterior margin and the ligament not reaching up to the umbones leave no doubt about its being a true *Acar* Gray.

Distribution: — The species was described from shells obtained at depths of over 400 fathoms from round the coasts of Peninsular India — from Off Travancore and in the Gulf of Manaar.

In the "Siboga" collection it is represented by young shells from Bay of Nangamessi, Sumba (St. 53), Bank between islands of Bahuluwang, and Tambolungan, South of Saleyer (St. 66), St. 88 (Deep Sea trawl at 0° 34'.6 N., 119° 8'.5 E), St. 90 (281 metres 1° 17'.5 N., 118° 53' E.), St. 94 (5° 11'.2 N., 119° 35'.4 E. 450 metres), St. 98 (350 metres, 6° 9' N., 120° 21' E.), St. 105 (275 metres, 6° 8' N., 121° 19' E.), St. 170 (Deep-sea trawl, 3° 37'.7 S., 131° 26'.4 E. 924 metres), St. 221 (Deep-sea trawl, 6° 24' S., 124° 39' E. 2798 metres), St. 251 (204 metres, 5° 28'.4 S., 132° 0'.2 E.), St. 256 (397 metres, 5° 26'.6 S., 132° 32'.5 E.), St. 259 (487 metres, 5° 29'.2 S., 132° 52'.5 E.), St. 260 (5° 36'.5 S., 132° 55'.2E. 90 metres), St. 262 (5° 53'.8 S., 132° 48'.8 E. 560 metres) and Macassar.

3. *Arca* (*Acar*) *tenella* Reeve.

1844. *Arca tenella* Reeve, Conch. Icon., II, *Arca*, pl. XIV, fig. 91.
1844. *Arca tenella* Reeve, Proc. Zool. Soc. London, p. 124.
1845. *Arca tenella* Catlow & Reeve, Conch. Nomencl., p. 51.
1848. *Arca tenella* Nyst, Mém. Soc. Roy. Belgique, XXII, p. 72.
1857. *Arca Barbatia tenella* Adams, H. & A., Gen. Rec. Moll., II, p. 535.
1860. *Arca tenella* Reeve, Elem. Conch., II, p. 93.
1867. *Barbatia mollis* Dunker, Novitat. Conch. Moll.-Mar., p. 92, pl. XXXI, figs. 2—4.
1869. *Barbatia mollis* Dunker, Cat. Mus. Godeffroy, IV, p. 114.
1874. *Barbatia tenella* Dunker, Cat. Mus. Godeffroy, V, p. 174.
1877. *Barbatia tenella* Tapparone-Canefri, Ann. Mus. Civ. Stor. Nat. Genova, IX, p. 292.
1880. *Arca* (*Barbatia*) *tenella* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell. p. 320.

1889. *Arca* (*Barbatia*) *mollis* Kobelt, in Martini Chemn. Conch.-Cab., (N. F.), VIII (2), *Arca*, p. 128, pl. XXXIII, figs. 5, 6.
1890. *Arca* (*Barbatia*) *tenella* Kobelt, op. cit., p. 155, pl. XXXIX, figs. 5, 6.
1890. *Arca* (*Acar*) *tenella* Paetel, Cat. Conch. Samm., III, p. 214.
1896. *Barbatia tenella* Casto de Elera, Cat. Sist. Filip., p. 803.
1899. *Arca tenella* Hedley, Mem. Austral. Mus., III, pp. 492, 528.
1899. *Barbatia tenella* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 185.
1903. *Arca* (*Barbatia*) *tenella* Smith, Faun. Geogr. Maldive Laccadive Archipel. II, p. 624.
1904. *Barbatia tenella* Lamy, Bull. Mus. d'Hist. Nat. Paris, X, p. 274.
1905. *Arca tenella* Hidalgo, Cat. Filip., p. 374.
1907. *Arca* (*Acar*) *tenella* Lamy, Journ. Conchyliol., LV, p. 93.
1909. *Arca* (*Acar*) *tenella* Lamy, Mém. Soc. Zool. France, XXII, p. 336.
1909. *Arca* (*Acar*) *tenella* Melvill, Trans. Linn. Soc. London (Zool.) XIII, p. 122.
1909. *Arca* (*Acar*) *tenella* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 117, pl. I, figs. 11—13.
1910. *Arca tenella* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Arca* (*Acar*) *tenella* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 13, pl. III, fig. 9.
1917. *Arca* (*Acar*) *tenella* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 33.
1929. *Arca* (*Acar*) *tenella* Dautzenberg, Faun. Colon. Francais., III. Fasc. IV, p. 577.

I agree with Lamy that this species should be referred to the subgenus *Acar* and not *Barbatia*. Lamy in his account has given the diagnostic characters of the species, and also included notes on its distribution.

Distribution: *A. tenella* has a wide distribution in the Red Sea and the Indo-Pacific.

The "Siboga" Expedition obtained a fair number of shells from the Anchorage off Labuan Pandan, Lombok (St. 34), St. 90 (1° 17'.5 N., 118° 53' E. 281 metres), Muaras Reef, east coast of Borneo (St. 91), St. 98, St. 103, 225^d and Zuid Island (Saleyer).

Subgenus **Fossularca** Cossmann.

1887. *Fossularca* Cossmann, Ann. Soc. Malacol. Belgique, XXII, p. 138.
1907. *Fossularca* Lamy, Journ. Conchyliol., LV, p. 4.
1925. *Fossularca* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 50.

Dall [1]) treats *Fossularca* Cossmann as a section of *Barbatia* Gray, but I agree with Lamy that it is possible to distinguish it as distinct. For the definition of the subgenus I have followed Lamy. *A.* (*F.*) *quadrilatera* Lamarck was designated as the genotype by Cossmann.

1. *Arca* (*Fossularca*) *sculptilis* Reeve.

1844. *Arca sculptilis* and *A. Zebuensis* Reeve, Conch. Icon., II, *Arca*, pl. XVII, figs. 118, 117 (not 120) [2]).
1844. *Arca sculptilis* and *A. Zebuensis* Reeve, Proc. Zool. Soc. London, p. 128.
1845. *Arca sculptilis* and *A. Zebuensis* Catlow & Reeve, Conch. Nomencl., p. 51.
1848. *Arca sculptilis* and *A. zebuensis* Nyst, Mém. Acad. Roy. Belgique, XXII. pp. 66, 78.
1860. *Arca sculptilis* and *A. Zebuensis* Reeve, Elem. Conch., II, p. 93.
1885. *Arca* (*Barbatia*) *sculptilis* Smith, "Challenger" Lamellibranchia, p. 262.
1889. *Arca* (s. s.) *Zebuensis* Kobelt in Martini, Chemn. Conch.-Cab., (N. F.), VIII (2), *Arca*, p. 86, pl. XXIII, figs. 7, 8.

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1) Dall, W. H. — Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 615 (1898).

2) As Smith pointed out (Rept. Voy. "Alert", p. 111, 1886) the figure numbers of the species *A. symmetrica* and *A. zebuensis* on pl. XVII of Reeve's Monograph in the Conch. Iconica have been reversed. I have examined the types of the two species in the collection of the British Museum (Nat. Hist.), London, and am able to conform Smith's conclusions.

1890. *Barbatia sculptilis* and *B. Zebuensis* Paetel, Cat. Conch. Samm., III, p. 214.
1891. *Arca* (*Acar*) *sculptilis* Kobelt in Martini, Chemn. Conch.-Cab., (N. F.), VIII (2), p. 193, pl. XLVI, fig. 14.
1907. *Arca* (*Fossularca*) *afra* var. *solida* Lamy, (ex parte), Journ. Conchyliol., LV, p. 100.
1909. *Arca* (*Fossularca*) *sculptilis* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 115.
1929. *Arca* (*Fossularca*) *afra* Dautzenberg (ex parte), Faun. Colon. Francais., III, Fasc. IV, p. 577.

I agree with Lynge that *A.* (*F.*) *sculptilis* is distinct from *A. afra* var. *solida* with which Lamy had united it, and that *A. zebuensis* Reeve is a synonym of this species.

Reeve's description of the species is very poor, but his figure accurately represents the form and outline of the shells, Smith published a detailed description of *A.* (*F.*) *sculptilis* in his account of the "Challenger" Lamellibranchia and Lynge added notes on the synonymy and colour of the shells of this species.

Distribution: — *A.* (*F.*) *sculptilis* has been recorded from Karachi, Bombay, India; Gulf of Siam, Amboina, the Philippines and Torres Straits.

In the "Siboga" collections the species is represented by two shells taken off Laiwui (St. 142) and Ambon (St. 231).

2. *Arca* (*Fossularca*) *symmetrica* Reeve.

1844. *Arca symmetrica* Reeve, Conch. Icon., II, *Arca*, pl. XVII, fig. 120.
1844. *Arca symmetrica* Reeve, Proc. Zool. Soc. London, p. 127.
1848. *Arca symmetrica* Nyst, Mém. Acad. Roy. Belgique, XXII, p. 70.
1884. *Arca* (*Barbatia*) *symmetrica* Smith, Rep. Voy. "Alert", p. 111.
1886. *Arca symmetrica* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 207.
1889. *Arca* (*Barbatia*) *symmetrica* Kobelt in Martini Chemn. Conch-Cab. (N. F.), VIII (2), *Arca*, p. 94, pl. XXV, figs. 7, 8.
1890. *Barbatia symmetrica* Paetel, Cat. Conch. Samm., III, p. 214.
1907. *Arca symmetrica* Lamy, Journ. Conchyliol., LV, p. 104.

As has been pointed out already (supra p. 96) Reeve mixed up the numbers of the figures of *A. symmetrica* and *A. zebuensis*. Smith, from an examination of the types in the Cuming collection was able to correct this mistake, but his conclusion of *A. zebuensis* being a variety of *A.* (*F.*) *symmetrica* is not justifiable.

This species is distinguished from *A. zebuensis* — which, as was pointed out by Lynge[1]), is a synonym of *A. sculptilis* and not *A. afra* as suggested by Lamy (op. cit., p. 100) — by the anterior and posterior sides of the shell being of about the same size, the posterior side not so oblique as in the latter species and the sculpture less strongly developed.

Distribution: — *A.* (*F.*) *symmetrica* was hitherto known from the Bay of Manilla, the Philippines, Singapore and Port Molle, Queensland.

In the "Siboga" collection the species is represented by a single right valve from the Bay of Bima (St. 47), a left valve from the Tual Anchorage, Kei Islands (St. 258) and a complete shell from Sapeh Bay, east Coast of Sumbawa (St. 311).

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1) Lynge, H. — D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, pp. 115. 116 (1909).

Subgenus **Bathyarca** Kobelt.

1891. *Bathyarca* Kobelt, in Martini Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, p. 214.
1898. *Bathyarca* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 619 (as a group of *Scapharca*).
1907. *Bathyarca* Lamy, Journ. Conchyliol., LV, p. 6.

The species of this subgenus with the genotype *A.* (*B.*) *pectunculoides* Scacchi generally have a small shell and are found at great depths. Dall has published an excellent description of its diagnostic characters.

1. *Arca* (*Bathyarca*) *anaclima* Melvill. (Plate VIII, figs. 9, 10).

1906. *Arca* (*Bathyarca*) *anaclima* Melvill, Proc. Zool. Soc. London, p. 794, pl. LIV, figs. 6, 6*a*.
1911. *Arca* (*Bathyarca*) *sp.*, Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 9, 15.

I refer a single specimen with the right valve partly damaged and the animal of which was described by Dr. P. Pelseneer as that of *Arca* (*Bathyarca*) *sp.*, to this species with some hesitation. It agrees fairly closely with the description and figures of *A.* (*B.*) *anaclima* from the Gulf of Oman, Persian Gulf, but I have not been able to compare it with the type.

The shell is small, somewhat longer than high, obliquely truncate, inequilateral, inequivalve, of a dirty yellow colour and covered with a thin epidermis. The valves are sculptured with fine concentric lirae, which are crossed by rather stronger lirae radiating from the umbones; the radiating lirae are less strongly developed in the middle region, and are better marked on the right than on the left valve. The umbones are minute, only slightly raised above the hinge-line, slightly acute, a little remote from one another and situated a little in front of the middle. The measurements of the single shell are: — Length 3.9 mm., height 3.4 mm., diameter 1.6 mm.

Distribution: — The species, as has been noted above, was described from the Persian Gulf, while the specimen here recorded was found in fine, yellow mud, from a depth of 1301 metres at Stat. 88 (0° 34′.6 N., 119° 8′.5 E.).

2. *Arca* (*Bathyarca*) *sibogai* sp. nov. (Plate II, figs. 1—3).

I give below a description of this interesting species which is not represented by complete specimens, but of which 4 valves, 3 left and 1 right, were dredged by the "Siboga" Expedition at a depth of 1158 metres.

Shell very small, thin, very inflated; hinge-line somewhat shorter than the maximum length of shell, which is of a rounded triangular form, with prominent prosocoelous umbones; left valve with fine, somewhat elevated, rounded, concentric lines crossed by closer, much less prominent and finer radial lines; on the right valve, as is usual in this subgenus, the radial sculpture is more prominent and consists of very minute but distinct radial lines running all over the surface and producing a delicate cancellated sculpture; cardinal area moderately wide; umbones subcentral; surface of area longitudinally striated; hinge with six to seven vertical teeth separated by a moderately wide smooth area from five to six smaller, more oblique posterior teeth; margin of valve thin, entire.

Measurements (in millimetres)

Length	5.5	4.5	4.4	3.8
Height	5	4.2	3.8	3.5
Thickness of single valve	2	1.6	1.6	1.4

The first three valves are the left valves and the fourth a right valve.

Habitat: — The 4 stray valves, which are quite fresh and not weathered, were dredged at St. 211 (5° 40′.7 S., 120° 45.5 E.) from a depth of 1158 metres.

Remarks: — *A.* (*B.*) *sibogai* is allied to *A.* (*B.*) *anaclima* Melvill [1], but is distinguished by the larger and different shaped shell: the sculpture is also very different.

3. *Arca* (*Bathyarca*) sp. (Plate II, fig. 4).

A dead, somewhat worn, single right valve dredged from a coarse sandy bottom at St. 159 (0° 59.1 S., 129° 48′.8 E. 411 metres) belongs undoubtedly to an undescribed species of the subgenus *Bathyarca*, but in view of there being only one valve available I refrain from describing the species. The measurements of the valve are: — length 12.5 mm., height 12 mm., thickness of single valve 4.8 mm. The sculpture consists of prominent radial ridges which are traversed by low concentric ridges giving rise to a reticulate sculpture over some parts. A photograph of the shell is published on pl. II (fig. 4).

4. *Arca* (*Bathyarca*) sp. (Plate II, figs. 5, 6).

I am unable to refer to any known species two stray, dead valves, both left, dredged from a depth of 462 metres at St. 212 (5° 54′.5 S., 120° 19′.2 E.), but in view of the shells being incomplete, I refrain from giving them a name or describing the species. I however, publish photographs of the two shells on pl. II (figs. 5, 6). These valves represent a species which probably is the largest of the *Bathyarcas* so far known. The sculpture consists of a large number of very regular, well marked, but minute concentric threads, a few very shallow radial threads are also to be distinguished on the anterior and posterior thirds of the valves; these are more prominent on the younger of the two specimens.

Measurements (in millimetres)

Length	10	22
Height	9	18.2
Thickness of single valve	3.5	8.3

Genus **Cucullaea** Lamarck.

1801. *Cucullaea* Lamarck, Syst. Anim. sans Vertèb., p. 116.
1857. *Cucullaea* Adams, H. & A., Gen. Rec. Moll., II, p. 539.
1898. *Cucullaea* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 603.
1907. *Cucullaea* Lamy, Journ. Conchyliol., LV, p. 11.

This genus was placed by Dall in the family Parallelodontidae of the superfamily Arcacea, but I see no reason for not including it in the family Arcidae.

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[1] Melvill, J. C. — Proc. Zool. Soc. London (1906), p. 794, pl. LIV, figs. 6, 6*a* (1907).

Adams and Lamy have given the diagnostic characters of the genus in detail. The genotype is *Cucullaea concamera* (Bruguière).

1. *Cucullaea granulosa* Jonas.

1784. *Arca cuculae concamerata* var. Chemnitz, Conch. Cab., VII, p. 174, pl. LIII, fig. 528.
1846. *Cucullaea granulosa* Jonas, Proc. Zool. Soc. London, p. 34.
1857. *Cucullaea concamerata* Deshayes (non Martini), Trait. Elém. Conch., II, p. 379, pl. XXXVI, figs. 12, 13.
1858. *Cucullaea granulosa* Adams, H. & A., Gen. Rec. Moll., II, p. 539.
1860. *Cucullaea granulosa* Reeve, Elem. Conch., II, p. 94.
1869. *Cucullaea granulosa* Sowerby in Reeve, Conch. Icon., XVII, *Cucullaea*, pl. I, figs. *2a*, *b*.
1869. *Cucullaea granulosa* Dunker, Cat. Mus. Godeffroy, IV, p. 114.
1874. *Cucullaea granulosa* Dunker, Cat. Mus. Godeffroy, V, p. 174.
1891. *Cucullaea granulosa* and *C. concamerata* (non Martini), Kobelt in Martini Chemn. Conch.-Cab. (N. F.), VIII (2), *Arca*, pp. 62, 228, pl. I, fig. 5, pl. V, figs. 1, 2.
1892. *Cucullaea granulosa* Crosse & Fischer, Journ. Conchyliol., XL, p. 76.
1904. *Cucullaea granulosa* Lamy, Bull. Mus. d'Hist. Nat. Paris, X, p. 278.
1907. *Cucullaea granulosa* Lamy, Journ. Conchyliol., LV, p. 306.
1909. *Arca* (*Cucullaea*) *granulosa* Lynge (ex parte, non Martini), D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 128.
1911. *Cucullaea granulosa* Pelseneer, "Siboga" Lamellibranchia (Anat.), pp. 10—12, pl. II, fig. 6; pl. III, figs. 7, 8.
1917. *Cucullaea concamerata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIII, p. 112.

I agree with Lamy that *C. granulosa* is distinct from *C. concamera* (Brug.); the differences pointed out by Lamy are more or less constant and it is possible to distinguish specimens of the former from those of the latter species.

Distribution: — Lamy has recorded *C. granulosa* from the Red Sea, the Gulf of Aden, Singapore, China and New Caledonia.

In the "Siboga" collection *C. granulosa* is represented by two odd valves from Macassar.

Genus **Limopsis** Sassi.

1827. *Limopsis* Sassi, Giornale Ligust. Scienz. Let. Art. Genova, I, p. 476.
1843. *Pectunculina* d'Orbigny, Paléontol. Française, Terr. Cret. III, p. 182.
1858. *Pectunculina* Adams, H. & A., Gen. Rec. Moll. II, p. 543.
1912. *Limopsis* Lamy, Journ. Conchyliol. LX, pp. 108—111.
1913. *Limopsis* Suter, Man. New Zealand Moll. p. 853.
1925. *Limopsis s. s.* and *Pectunculina* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 54.

After a careful examination of the various Indo-Pacific species I find that the differences in the sculpture, the hinge and the smooth or fluted inner margin of the shell between the two subgenera, *Limopsis s. s.* and *Pectunculina*, are not constant, and I have, therefore, thought it best to unite the two together.

The distinguishing characters of *Limopsis* are given by both Lamy and Woodring, and I have nothing to add to their detailed accounts.

1. *Limopsis multistriata* (Forskål).

1775. *Arca multistriata* Forskål, Descr. Anim. Orient. Observ., p. 123.
1784. *Arca multistriata* etc. Chemnitz, Conch.-Cab., VII, p. 240, pl. LVIII, fig. 573.
1788. *Arca multistriata* Schröter, Conch.-Cab. Namen. Reg., p. 6.
1789. *Arca multistriata* Bruguière, Encycloped. Méthod., I, p. 118.
1790. *Arca striata* Gmelin, Syst. Nat., (ed. XIII), p. 3308.
1802. *Arca multistriata* Bosc, Hist. Nat. Coq., III, p. 136.
1817. *Arca multistriata* Dillwyn, Descr. Cat., I, p. 244.
1817. Savigny, Descr. Egypte, pl. X, figs. 3, 1—5.
1835. *Pectunculus multistriatus* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 495.
1843. *Pectunculus cancellatus* Reeve, Proc. Zool. Soc. London, p. 188.
1843. *Pectunculus cancellatus* and *P. multistriatus* Reeve, Conch. Icon., I, *Pectunculus*, pl. VII, figs. 39, 42.
1845. *Pectunculus cancellatus* Catlow & Reeve, Conch. Nomencl., p. 51.
1850. *Pectunculus multistriatus* Deshayes, Traité Elem. Conch., pl. XXXIV, figs. 16—18.
1858. *Limopsis cancellata* and *L. multistriata* Adams, H. & A., Gen. Rec. Moll., p. 544, pl. CXXVI, figs. 2, 2*a*.
1860. *Pectunculus cancellatus* Reeve, Elem. Conch., II, p. 95.
1862. *Limopsis cancellatus* and *L. multistriata* Jeffreys, Ann. Mag. Nat. Hist., (3) X, p. 345.
1862. *Limopsis Philippi* and *L. Woodwardi* Adams, A., Proc. Zool. Soc. London, pp. 230, 231.
1862. *Pectunculus* (*Limopsis*) *multistriata* Chenu, Man. Conchyliol. II, p. 177, fig. 881.
1865. *Limopsis multistriata* Vaillant, Journ. Conchyliol., XIII, p. 116.
1869. *Limopsis multistriata* Issel, Malacol. Mar. Rosso, p. 88.
1870. *Limopsis multistriata* Dunker, Cat. Mus. Godeffroy, IV, p. 114.
1877. *Limopsis multistriata* and *L. cancellata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 449.
1882. *Limopsis cancellatus* Angas, Proc. Zool. Soc. London, p. 193.
1885. *Limopsis cancellata* Smith, "Challenger" Lamellibranchia, p. 256.
1886. *Limopsis multistriata* Fischer, P., Man. Conchyliol., p. 979.
1886. *Limopsis multistriata* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 95.
1889. *Limopsis cancellata* Whitelegge, Journ. Roy. Soc. N. S. Wales, XXIII, p. 243.
1890. *Limopsis multistriata* Vassel, Bull. Soc. Hist. Nat. d'Autun, III, p. 26.
1890. *Pectunculina multistriata* Paetel, Cat. Conch. Samm., III, p. 222.
1895. *Limopsis woodwardi* Pilsbry, Cat. Mar. Moll. Japan, p. 150.
1899. *Limopsis Woodwardi* and *L. cancellata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 188.
1901. *Limopsis multistriata* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXVII, p. 290.
1901. *Limopsis multistriata* Tate & May, Proc. Linn. Soc. N. S. Wales, XXVI, p. 437.
1902. *Pectunculina multistriata* Shopland, Proc. Malacol. Soc. London, V, p. 179.
1906. *Limopsis multistriata* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 291.
1906. *Limopsis multistriata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 463.
1906. *Limopsis multistriata* Melvill & Standen, Proc. Zool. Soc. London, p. 799.
1909. *Limopsis Woodwardi* Owston, Japan. Loochooan Shells, p. 33.
1909. *Limopsis cancellata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 129.
1910. *Limopsis multistriata* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Limopsis cancellata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 8, pl. I, figs. 10, 11.
1912. *Limopsis multistriata* Lamy, Journ. Conchyliol., LX, p. 132.
1916. *Limopsis multistriata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXII, p. 387.
1917. *Limopsis multistriata* Odhner, Kungl. Sv. Akad. Handl., LII (N⁰. 16), p. 22.
1926. *Limopsis multistriata* Pallary, Mem. Inst. Egypte, XI, p. 113, pl. XIV, figs. 3, 1—5.
1927. *Limopsis multistriata* Tomlin, Trans. Zool. Soc. London, XXVI, p. 304.
1929. *Pectunculina multistriata* Dautzenberg, Faun. Colon. Francais., III, Fasc. IV, p. 582.
1930. *Limopsis multistriata* Cox, Mon. Geol. Dept. Hunterian Mus. Glasgow Univ., N⁰. 4, p. 151.

I have examined all the material of *L. multistriata*, *L. cancellata*, *L. woodwardi* and

L. philippi in the collections of the British Museum (Nat. Hist.), London, and agree with Cooke and Smith that they all represent different stages in growth of the same species. The small differences in form of the shell, as was pointed out by Smith, are of no importance for the distinction of the species, and the shells of the above noted species do not show any other differences either in the sculpture or the hinge.

Distribution: — *L. multistriata* is widely distributed in the Red Sea and the Indo-Pacific.

In the "Siboga" collection it is represented by a half-grown specimen and a few young shells collected at Anchorage off Ubian (St. 99), Sulu Harbour, Sulu Islands (St. 104), Anchorage off Pulu Tongkil, Sulu Archipelago (St. 109), St. 300 (10° 48′.6 S., 123° 23′.1 E.) and St. 321 (6° 5′.5 S., 113° 30′ E.).

2. *Limopsis indica* Smith.

1894. *Limopsis indica* Smith, E. A., Ann. Mag. Nat. Hist., (6) XIV, p. 171, pl. V, fig. 7.
1895. *Limopsis indica* Smith, E. A., Ann. Mag. Nat. Hist., (6) XVI, p. 15.
1897. *Limopsis indica* Smith, E. A., Illustr. Zool. "Investigator", pl. III, figs. 4*a–c*.
1904. *Limopsis indica* Smith, E. A., Ann. Mag. Nat. Hist., (7) XIV, p. 12.
1906. *Limopsis indica* Smith, E. A., Ann. Mag. Nat. Hist., (7) XVIII, p. 254.
1912. *Limopsis indica* Lamy, Journ. Conchyliol., IX, p. 119.

After comparison of the "Siboga" specimens from the localities enumerated below with the types of *L. indica* Smith, in the Indian Museum, Calcutta, I have no doubt that they all are to be referred to this species. All the specimens are greatly weathered and worn and on none of them any trace of the pilose epidermis or of the sculpture is to be distinguished. The largest shell is 11.8 mm. long and 16.7 mm. high.

Distribution: — *L. indica* had so far been recorded from off Ceylon and off Maldive Islands in the Arabian Sea.

In the "Siboga" collection there are specimens from St. 95 (5° 43′.5 N, 119° 40′ E.) and St. 208 (5° 39′ S., 122° 12′ E.).

3. *Limopsis lata* Smith. (Plate II, figs. 7, 8).

1885. *Limopsis lata* Smith, "Challenger" Lamellibranchia., p. 257, pl. XVIII, figs. 7, 7*a*.
1913. *Limopsis lata* Suter, Man. New Zealand Moll., p. 853.
1915. *Limopsis lata* Suter, Man. New Zealand Moll., Atlas, pl. LI, figs. 9, 9*a*.

Smith's description of *L. lata* is very detailed, and needs no elaboration. His comparison of the species with *L. minuta* (Philippi) [1]) however, in view of the materially different hinge in the two species, is far from justifiable.

Both Lamy [2]) and Suter followed Smith in comparing *L. lata* with *L. minuta*, but it is not possible to understand Lamy's remark that the former is distinguished from the latter "surtout par sa largeur". The sculpture and hinge of the two species are very different and there can be no question about the two species being distinct.

Distribution: — *L. lata* was described from specimens obtained by the "Challenger" off the coast of New Zealand in 700 fathoms.

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1) Philippi, R. A. — Enum. Moll. Sicil., I, p. 63, pl. V, figs. 3*a*, *b* (1836).

2) Lamy, E. — Journ. Conchyliol., LX, p. 124 (1912).

The "Siboga" Expedition collected two young and two half-grown shells in a deep-sea trawl at St. 52 (9° 3′.4 S., 119° 56′.7 E.). I figure one of the shells.

4. *Limopsis belcheri* (Adams & Reeve). (Plate II, figs. 9—12).

1850. *Pectunculus Belcheri* Adams, A. & Reeve, L., Zoology Voy. "Samarang", p. 76, pl. XXII, fig. 5.
1858. *Limopsis Belcheri* Adams, H. & A., Gen. Rec. Moll., II, p. 544.

Lamy [1]) in his revision of the recent species of the genus *Limopsis* did not deal with *L. belcheri* in any detail, and only noted that it is probably allied to *L. cumingii* A. Adams. I have examined the type-shell of the species in the British Museum (Nat. Hist.), London, and have no doubt about its being a distinct species. The first point that deserves consideration in reference to *L. belcheri* is that of its habitat. In the original account in the Zoology of the "Samarang" the species was stated to have been collected at the Cape of Good Hope at a depth of 120 fathoms. Later Adams [2]) in writing of the habitat of *L. abyssicola* noted that "the shell figured as *Pectunculus belcheri* (Moll. Voy. Sam. pl. 22, f. 5), a much larger and more compressed species, was, I believe, obtained from the Korean Islands". The type-shell bears the label "Sooloo Sea, 40 fathoms, mud". In view of a number of shells collected by the "Siboga" Expedition at St. 95 in the Sulu Sea agreeing with the type shell of *L. belcheri*, I am of opinion, that the locality as noted on the type-shell is correct. In view of the meagre description of the species by Adams & Reeve I append a few remarks on the type-shell.

The species is of a large size, with an oblique ovate shell, rather compressed with acute umbones situated about the middle. The anterior side is shorter than the posterior, it is broadly curved and runs gradually into the evenly curved ventral margin; the posterior is less arched and appears almost straight. The hinge margin is moderately broad and only slightly arcuate; there are 10 teeth anterior to and 7 posterior to the triangular ligament. The sculpture consists of fine radial and concentric ridges which are covered up by a coarse fibrous epidermis. The inner margin of the shell is finely crenulated. The measurements of the type shell are: — Length 30 mm., height 26 mm., diameter 11 mm.

Distribution: — The type-shell of this species, as discussed above, probably came from the Sulu Sea.

The "Siboga" Expedition obtained a number of dead and worn shells from St. 95 (Sulu Sea, 5° 43′.5 N., 119° 40′ E.).

5. *Limopsis dautzenbergi* sp. nov. (Plate II, figs. 13, 14).

The following is a description of this new species: — Shell small, subovate, moderately convex, subequilateral; umbones not very prominent, acute, curved inwards and backwards, sculpture consisting of strongly raised, concentric ribs which become cut up into minute almost rounded granules by the fine radial riblets; radial riblets more prominent anteriorly and posteriorly; in front of the ligament are 3—4 almost vertical teeth, the innermost of which is

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1) Lamy, E. — Journ. Conchyliol., LX, p. 119 (1912).
2) Adams, A. — Proc. Zool. Soc. London, p. 230 (1860).

placed almost below the ligament and separated by a short edentulous space from 4—5 more horizontal teeth of the posterior series; muscle scars hardly visible; inner ridge of anterior margin with very minute, irregular ribs; these are almost absent on the posterior margin and the shell margin in this area appears almost smooth.

Measurements (in millimetres)

Length	6.3	6.2
Height.	7.4	7.3
Diameter	2 (left valve)	2.2 (right valve).

Habitat: — 4 stray valves of this interesting species were dredged at St. 90 (1° 17′.5 N., 118° 53′ E.) at a depth of 281 metres.

Remarks: — *L. dautzenbergi* is allied to *L. obliqua* A. Adams 1) from Japan, but is distinguished by its shape, sculpture and the altogether different hinge.

Genus **Glycymeris** Da Costa.

1778. *Glycymeris* 2) Da Costa, Brit. Conch., p. 168.
1799. *Pectunculus* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 87.
1898. *Glycymeris* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 607.
1904. *Pectunculus* Dautzenberg & Dollfus, Journ. Conchyliol., LII, pp. 109—122.
1905. *Glycymeris* Dall, Journ. Conch., XI, pp. 145, 146.
1912. *Pectunculus* Lamy, Journ. Conchyliol., LIX, pp. 81—84.
1925. *Glycymeris* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 24.
1927. *Glycymeris* Cox, Rept. Palaeontol. Zanzibar, p. 65.
1930. *Glycymeris* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N^{0}. 3, p. 70.

Dautzenberg and Dollfus have discussed their reasons for adopting the generic name *Pectunculus* in preference to *Glycymeris*. They accept Huddersford 3) as the author of the genus rather than Lamarck, but in Huddersford's work the word Pectunculi is used as a vernacular name and not in a generic sense, as it is understood today. I have, therefore, following Dall, Woodring, Cox and Stewart adopted *Glycymeris* Da Costa in preference to *Pectunculus* Huddersford.

Glycymeris orbicularis Da Costa is accepted, by tautonomy, as the genotype of *Glycymeris*, but this species, as Bucquoy, Dautzenberg and Dollfus 4) have shown, is synonymous with *G. glycymeris* (Linn.).

1. *Glycymeris amboinensis* (Gmelin).

1709. *Concha indica* etc., Bonanni, Mus. Kircher, p. 448, pl. XVII, fig. 129.
1742. *Concha crassa, striata* Gualtier, Ind. Test. Conch., pl. LXXII, fig. 11.
1771. Knorr, Vergnügen der Augen, etc., V, pl. XII, fig. 4.
1784. *Arca pectunculus* Chemnitz (ex parte), Conch. Cab., VII, pl. LVIII, figs. 568, 569.
1790. *Cardium amboinense* Gmelin, Syst. Nat. (ed. XIII), p. 3255.
1792. *Schwarzgefleckte Gogelhöpflein* Bruguière, Encyclopéd. Méthod., p. 20, pl. CCCXI, fig. 5.
1827. *Pectunculus pectiniformis* Blainville, Man. Malacol., pl. LXV, fig. 3.

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1) Adams, A. — Proc. Zool. Soc. London, p. 229 (1862).
2) Spelt as *Glycimeris* in Index p. 11 (1778).
3) Huddersford, G. — Martini Lister's Hist. Conch. Index, p. 6 (1770).
4) Bucquoy, E., Dautzenberg, P. and Dollfus, G. F. — Moll. Roussilon, II, pp. 195—199, pl. XXXIV (1891).

1843. *Pectunculus pectiniformis* Reeve, Conch. Icon., I, *Pectunculus*, pl. III, figs. 11*a*, *b*.
1889. *Pectunculus pectiniformis* Morlet, Journ. Conchyliol., XXXVII, p. 163.
1891. *Pectunculus pectunculus* Smith (ex parte), Proc. Zool. Soc. London, pp. 432, 433.
1909. *Pectunculus amboinensis* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 128.
1912. *Pectunculus pectunculus* var. *amboinensis* Lamy, Journ. Conchyliol., LIX, p. 85.

SMITH was the first author to point out that two distinct species had been confused under the specific name *pectunculus*, and he revived GMELIN's name *amboinensis* for the form in which the ribs are separated by narrow sulci only. In this he was followed by LYNGE, but LAMY considers *amboinensis* only as a variety of the form *G. pectunculus* in which the ribs are separated by well defined grooves and which are about half as broad as the ribs themselves. I have examined the entire collection of these forms in the British Museum (Nat. Hist.), London, and though I agree with LYNGE that the colour of the hinge-plate, which SMITH considered as an important character for the differentiation of the two species, is not constant, there can be no doubt about the two being quite distinct species.

Distribution: — According to LAMY *G. amboinensis* is found in the Red Sea, Cochin-China, Pulu Condor, Amboina, Java and New Caledonia, while MORLET recorded it from the Gulf of Siam.

In the "Siboga" collection it is represented by a half-grown shell collected from a reef in Madura Bay, Molo Strait (St. 51) and two young shells from the Bank between the islands of Bahuluwang and Tambolungan, South of Saleyer (St. 66) and inner side of the Muaras Reef, East coast of Borneo (St. 91) respectively.

2. *Glycymeris aurifluus* (Reeve).

1843. *Pectunculus aurifluus* Reeve, Proc. Zool. Soc. London, p. 34.
1843. *Pectunculus aurifluus* Reeve, Conch. Icon., I, *Pectunculus*, pl. IV, figs. 17*a*, *b*.
1843. *Pectunculus aurifluus* Hanley, Rec. Biv. Shells, p. 165, pl. XIX, fig. 37.
1845. *Pectunculus aurifluus* Catlow & Reeve, Conch. Nomencl., p. 51.
1858. *Axinaea* (*Pectunculus*) *aurifluus* Adams, H. & A., Gen. Rec. Moll., II, p. 543.
1860. *Pectunculus aurifluus* Reeve, Elem. Conch., II, p. 95.
1862. *Pectunculus aurifluus* Chenu, Man. Conchyliol., II, p. 176, fig. 876.
1890. *Pectunculus* (*Pectunculus*) *aurifluus* Paetel, Cat. Conch. Samm., III, p. 21.
1896. *Pectunculus aurifluus* Casto de Elera, Cat. Sist. Filip., p. 804.
1905. *Pectunculus aurifluus* Hidalgo, Cat. Moll. Filip., p. 52.
1911. *Pectunculus aurifluus* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 7, pl. I, figs. 5—7.
1912. *Pectunculus aurifluus* Lamy, Journ. Conchyliol., LIX, p. 87.

REEVE's description of this species being distinguishable by "its very bright orange painting" is of no value whatever, as even the shells from the original locality, Island of Capul, Philippines from the "Cuming Collection" in the British Museum, (Nat. Hist.), London, do not all have the bright orange painting; several of the transverse patches are of a chocolate or even blackish brown colour. LAMY, however, pointed out the main distinguishing characters of the species in reference to *G. pectiniformis* of Lamarck (= *G. pectunculus* of Linn.) is that its umbones are strongly recurved forwards and instead of being placed about the centre of the ligamental area are situated near its anterior extremity. It may also be noted that compared to this species the shells of *G. aurifluus* are much higher in proportion to the length and are much more orbicular in shape. The obsolete grooving of the radial ribs to which REEVE refers in his description is not present in the young shells, while the ribs on the area in front of the umbones are distinctly grooved; the fine concentric threads running crosswise to the radial ribs are well marked in young shells and on the marginal region. In view of no measurements of the species having been published, I give below the measurements of four shells from the "Siboga" collection and two from the Island of Capul in the British Museum Collection.

Measurements (in millimetres)

Length	13.2	22.7	29.2	47	50	49
Height	13.6	21.4	28	51	55	55.3
Diameter . . .	8.8	11.7	17.3	29.2	32	34

Distribution: — The species has so far been recorded from the Philippines only.

In the "Siboga" collection it is represented by a single young shell trawled off Banda Anchorage (St. 240), two stray valves of young shells collected at Banda at a depth of 9—45 metres, and 3 shells dredged off the Anchorage East of Dangar Besar, Saleh Bay (St. 315).

3. *Glycymeris lividus* (Reeve).

1843. *Pectunculus lividus* Reeve, Proc. Zool. Soc. London, p. 190.
1843. *Pectunculus lividus* Reeve, Conch. Icon., I, *Pectunculus*, pl. IX, fig. 51.
1845. *Pectunculus lividus* Catlow & Reeve, Conch. Nomencl., p. 52.
1863. *Pectunculus lividus* Deshayes, Cat. Moll. Réunion, p. 22.
1869. *Pectunculus lividus* Issel, Malacol. Mar. Rosso, p. 88.
1870. *Axinea livida* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 449.
1880. *Pectunculus lividus* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 320.
1886. *Axinaea livida* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 95.
1890. *Pectunculus* (*Axinaea*) *lividus* Paetel, Cat. Conch. Samm., III, p. 219.
1901. *Pectunculus lividus* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 290.
1906. *Pectunculus lividus* Melvill & Standen, Proc. Zool. Soc. London, p. 798.
1911. *Pectunculus lividus* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVII, p. 130.
1912. *Pectunculus lividus* Lamy, Journ. Conchyliol., LIX, p. 148.

Of the distinguishing characters of *G. lividus*, as pointed out by Reeve and Lamy, the angulation of the anterior side does not appear till the shell has grown to a sufficiently large size, nor is the margin of the young or half grown shells livid-blue. Young shells, such as the ones collected by the "Siboga" Expedition are of a uniform reddish brown colour crossed by much lighter, almost yellowish thread-like radiating lines separating the low radial ridges or rays.

G. heroicus Melvill & Standen[1]) from the Persian Gulf to which Lamy refers in his account of this species is, as I have satisfied myself by an examination of the type in the British Museum (Nat. Hist.), London, quite distinct. It is distinguished by the shell being much inflated, orbicular with the upper margin much less arched and angulated, much larger and more excavated ligamental area, quite different colour, and more strongly marked sculpture.

Distribution: — *G. lividus* was originally described from the Red Sea, but has since been recorded from the Island of Réunion, Mauritius and Karachi and appears to be widely distributed in the Indian Ocean.

The "Siboga" Expedition dredged three valves, the largest of which is 19.6 mm. in length and 18.4 mm. in height in Wunoh Bay, N. W. coast of Waigeu Island (St. 152).

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[1]) Melvill, J. C. & Standen, R. — Proc. Zool. Soc. London, p. 798, pl. IV, fig. 1 (1906).

4. *Glycymeris reevei* (Mayer).

1843. *Pectunculus angulatus* Reeve (non Lamarck), Conch. Icon., I, *Pectunculus*, pl. VI, fig. 30.
1843. *Pectunculus angulatus* Hanley (non Lamarck), Rec. Biv. Shells, p. 163.
1860. *Pectunculus angulatus* Reeve (non Lamarck), Elem. Conch., II, p. 95.
1868. *Pectunculus Reevei* Mayer, Vierteljahr. Naturf. Ges. Zürich, XIII, p. 23.
1868. *Pectunculus Reevei* Mayer, Cat. Mus. Zürich, III, p. 5.
1879. *Axinaea Hanleyi* Angas, Proc. Zool. Soc. London, p. 418, pl. XXXV, fig. 3.
1905. *Pectunculus angulatus* Hidalgo (non Lamarck), Rev. Acad. Cienc. Madrid, III, p. 52.
1912. *Pectunculus Reevei* Lamy, Journ. Conchyliol., LIX, p. 109.

After a careful comparison of the type-shell of *Axinaea hanleyi* Angas, of unknown habitat in the British Museum (Nat. Hist.) London, and another shell from Fiji Islands which resembles it in all respects, with shells of *G. reevei* (Mayer) I have no doubt that Angas's species is the same as Mayer's species from the Philippines. I have also examined the type shell of Angas's *A. nova-caledoniensis*[1]) and find that it differs from *G. reevei* in the shell being more uniformly coloured, lighter and less inflated; the more regular outline, narrow and shorter igamental area, and less prominent sculpture also help to distinguish it from the latter species. *G. reevei* is allied to *G. lividus* (Reeve), but is distinguished by the outline and form of the shell, the less prominent umbones, hinge more arched and more distinctly impressed sculpture.

Distribution: — *G. reevei* has so far been recorded from the Philippines and New Caledonia.

The "Siboga" Expedition obtained a fair number of young fresh specimens from Anchorage off Kampong Kelang, South Coast of Manipa Island (St. 184), Banda Anchorage (St. 240), dredged at 36 metres at Rumah-Kudah Bay, Roma Island (St. 279) and Anchorage East of Dangar Besar, Saleh Bay (St. 313). Dead shells were also obtained at Anchorage off Djangkar, Java (St. 4), Sailus Ketjil, Paternoster Islands (St. 37), Western Entrance Samau Strait (St. 59), Pulu Sebangkatan, Borneo Bank (St. 81), Muaras Reef, inner side: East coast of Borneo (St. 91), Anchorage off Lirung, Salibabu Island (St. 133), Tual Anchorage, Kei Island (St. 258), and Anchorage between Nusa Besi and the N. E. point of Timor (St. 282).

The measurements of the largest specimen in the "Siboga" collection are: — Length 22.2 mm., Height 21.3 mm., Diameter 15.6 mm., while those of the largest shell in the British Museum are: — 50 mm. × 47.5 mm. × 31.8 mm.

5. *Glycymeris tenuicostatus* (Reeve).

1843. *Pectunculus tenuicostatus* Reeve, Proc. Zool. Soc. London, p. 80.
1843. *Pectunculus tenuicostatus* Reeve, Conch. Icon., I, *Pectunculus*, pl. VI, fig. 35.
1852. *Pectunculus tenuicostatus* Forbes, Voy. "Rattlesnake", II, Moll., p. 366.
1856. *Pectunculus tenuicostatus* Hanley, Rec. Biv. Shells, p. 375, pl. XIX, fig. 375.
1858. *Axinaea* (*Pectunculus*) *tenuicostatus* Adams, H. & A., Gen. Rec. Moll., II, p. 543.
1867. *Axinaea* (*Pectunculus*) *tenuicostatus* Angas, Proc. Zool. Soc. London, p. 932.
1889. *Pectunculus tenuicostatus* Whitelegge, Journ. Proc. Roy. Soc. N. S. Wales, XXIII, p. 243.
1891. *Pectunculus tenuicostatus* Fischer, P., Journ. Conchyliol., XXXIX, p. 313.
1912. *Pectunculus tenuicostatus* Lamy, Journ. Conchyliol., LIX, p. 105.

The two stray valves, which I assign to this species with some doubt, were obtained by dredging in the Western entrance of the Samau Strait (St. 59). Both the shells are very young and are greatly weathered, and it is not possible, therefore, to be absolutely definite about their identification; in general form and sculpture, however, they resemble Reeve's specimens of *G. tenuicostatus*.

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[1]) Angas, G. F. — Proc. Zool. Soc. London, p. 417, pl. XXXV, fig. 2 (1879). The name of the species was changed to *caledonica* by Crosse, Journ. Conchyliol., XXVIII, p. 272 (1880).

6. *Glycymeris hoylei* (Melvill & Standen).

1899. *Pectunculus Hoylei* Melvill & Standen, Journ. Linn. Soc. London, (Zool.), XXVII, p. 187, pl. XI, fig. 24.
1906. *Glycymeris cardiiformis* Hedley (nec Angas), Proc. Linn. Soc. N. S. Wales, XXVI, p. 470.
1909. *Pectunculus Hoylei* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 123.
1912. *Pectunculus Hoylei* Lamy, Journ. Conchyliol., LIX, p. 93.

Hedley's record of *G. cardiiformis* (Angas) from the Mast Head Reef, Australia, is, as Lamy was able to confirm by an examination of Hedley's specimens, based on shells of *G. hoylei* (Melvill & Standen).

Distribution: — *G. hoylei* was originally described from the Torres Straits, and has since been recorded from the Indian Ocean.

In the "Siboga" collection there are a number of young and rather worn shells from the Western Entrance, Samau Strait (St. 59), St. 63 (7° 37′.2 S., 122° 3′.5 E.), Borneo Bank (St. 80), and St. 95 (5° 43′.5 N., 119° 40′ E.). All these specimens I have compared with the types of the species in the British Museum, London, and can find no differences either in the form or the sculpture.

7. *Glycymeris dautzenbergi* sp. nov. (Plate II, figs. 15—18).

The following is a description of this new species: — Species of a small size; shell about as long as high, rather flat, rounded, solid; umbones prominent, full, subcentral; sculpture consisting of 23 almost equally spaced radial ribs, on young shells and younger parts of adult shells closely placed and separated by shallow and thin furrows, those in adults broaden out to interspaces almost as broad as ribs near the distal margin; concentric sculpture consisting of fine, but deep striae, which cut up the radial ribs into rounded to ovoidal nodules, near the margin in adult shells lower nodules are often cut up into two by the channeling of the radial ribs; cardinal area narrow, not deeply excavated, extending almost equally in front of and behind the umbones; hinge-plate moderately broad, furnished with 9—10 oblique denticles arranged in a curved series on each side and connected by 6—7 vertical teeth in the middle. Muscle scars not deeply scalloped at the edge and armed internally with 16 broad denticles of inverted triangular shape. Interior of shell glossy white with splashes of brown below and around the muscle-scar areas, periostracum uniform dirty white.

Measurements (in millimetres)

Length	8	10.2	12.2	19.6
Height	7.8	9.8	12	19.3
Diameter	4.3	5.4	7.2	10.8

Habitat: — Two young shells of this interesting species were dredged by the "Siboga"

Expedition at St. 260 (5° 36′.5 S., 132° 55′.2 E.) and two adult shells at Anchorage East of Dangar Besar, Saleh Bay (St. 313).

Relationships: — *G. dautzenbergi* is superficially very like the young shells of *G. maskatensis* (Melvill)[1], but is distinguished by the form of the shell, its much broader hinge-plate and a quite different type of sculpture.

Family MYTILIDAE.

Genus **Brachidontes** Swainson.

1840. *Brachidontes* Swainson, Treat. Malacol., p. 384.
1846. *Brachyodontes* Agassiz, Nomencl. Zool. Ind. Univ., p. 51.
1886. *Brachydontes* Fischer, P., Man. Conchyliol., p. 968.
1889. *Brachydontes* Dall, Bull. U. S. Nat. Mus., N° 37, p. 38.
1898. *Brachydontes* Dall, Trans. Wagner Free Inst. Sci. Philadelphia. III, p. 790.
1905. *Brachyodontes* Jukes-Browne, Proc. Malacol. Soc. London, VI, p. 222.
1925. *Brachydontes* Woodring, Miocene Mollusks from Bowden, Jamaica, *Pelecypods* etc., p. 85.
1930. *Brachidontes* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N° 3, p. 100.

In accepting *Brachidontes* Swainson as a genus I have followed JUKES-BROWNE. A good description of the genus and of the two subgenera *Hormomya* Mörch[2]) and *Septifer* Récluz[3]) is published in JUKES-BROWNE's paper cited above. The type of *Brachidontes* is *B. sulcatus* (Lamarck), of *Hormomya* — *B.* (*H.*) *exustus* (Linn.) and of *Septifer* — *B.* (*S.*) *bilocularis* (Linn.).

1. *Brachidontes* (*Hormomya*) *variabilis* (Krauss).

1817. *Moule* Savigny, Descr. Egypt., Moll., pl. XI, fig. 5.
1827. *Mytilus exustus* Audouin (nec Linn., non Lamarck), Expl. pl. de Savigny, p. 205.
1848. *Mytilus variabilis* Krauss, Südafr. Moll., p. 25, pl. II, fig. 5.
1857. *Mytilus variabilis* Adams, H. & A., Gen. Rec. Moll., II, p. 513.
1865. *Mytilus exustus* Vaillant, Journ. Conchyliol., XIII, p. 114.
1869. *Mytilus variabilis* Issel, Malacol. Mar. Rosso, p. 94.
1870. *Mytilus pharaonis* Fischer, P., Journ. Conchyliol., XVIII, p. 169.
1870. *Mytilus* (*Aulacomya*) *variabilis* MacAndrew, Ann. Mag. Nat. Hist. (4) VI, p. 448.
1877. *Mytilus* (*Aulacomya*) *variabilis* Pagenstecher, Zool. Ergebn. Reise Rothen Meer. Mollusk., p. 38.
1879. *Mytilus variabilis* von Martens, Monatsb. K. Akad. Wiss. Berlin, p. 741.
1879. *Mytilus variabilis* Smith, Phil. Trans. Roy. Soc. London, LI, p. 476.
1886. *Mytilus variabilis* Cooke, Ann. Mag, Nat. Hist., (5) XVII, p. 137.
1887. *Mytilus senegalensis* Clessin (ex parte), in Martini & Chemn. Conch.-Cab. (N. F.), VIII (3), *Mytilidae*, p. 38, pl. XI, figs. 3, 4.
1890. *Mytilus variabilis* Paetel., Cat. Conch. Samm., III, p. 193.
1892. *Mytilus variabilis* Sowerby, Marine Shells, S. Africa, p. 64.
1893. *Mytilus variabilis* Dautzenberg, Bull. Soc. Zool. France, XVIII, p. 84.
1901. *Mytilus variabilis* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXIX, p. 288.
1904. *Mytilus* (*Aulacomya*) *variabilis* Smith, Journ. Malacol., XI, p. 25.
1906. *Mytilus variabilis* Melvill & Standen, Proc. Zool. Soc. London, p. 799.
1907. ? *Mytilus senegalensis* Lamy (non Lamarck), Bull. Mus. d'Hist. Nat. Paris, XIII, p. 152.

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1) I figure a shell of this species, from the Persian Gulf, for comparison (Plate II, figs. 19, 20).

2) MÖRCH, O. A. L., — Cat. Yoldi, II, p. 53 (1853).

3) RÉCLUZ, C. A., — Rev. Zool., pp. 225—227 (1848).

1909. *Mytilus* (*Hormomya*) *variabilis* Lamy, Mém. Soc. Zool. France, XXII, p. 337.
1910. *Mytilus variabilis* Dautzenberg, Journ. Conchyliol., LVIII, p. 30.
1919. *Mytilus* (*Hormomya*) *variabilis* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXV, p. 42.
1926. *Mytilus Hormomya variabilis* Pallary, Mém. Inst. Egypt., XI, p. 116, pl. XV, fig. 5.
1927. *Brachidontes variabilis* Tomlin, Trans. Zool. Soc. London, XXII, p. 302.
1929. *Mytilus* (*Hormomya*) *variabilis* Dautzenberg, Faun. Colon. Francais., III, Fasc. 4, p. 570.

Various authors such as DUNKER [1]), COOKE (loc. cit.), SMITH [2]) and DAUTZENBERG [3]) have at different times included this species in the synonymy of the American species *B.* (*H.*) *exustus* (Lam.) or the West African *B.* (*H.*) *senegalensis* (Lam.). I, however, am of opinion that KRAUSS's species *B.* (*H*). *variabilis* is quite distinct from either of these species and is confined to the Indo-Pacific region and the Red Sea only. This appears to be the idea of Monsieur P. DAUTZENBERG as well, for in his recent work on the Molluscs of Madagascar (1929) he considers *B.* (*H.*) *variabilis* as a distinct species.

As TOMLIN has recently shown the species belongs to SWAINSON's genus *Brachidontes*, and adopting JUKES-BROWN's nomenclature it has to be placed in the subgenus *Hormomya* Mörch.

Distribution: — TOMLIN remarked that the species "has probably always been a widely-distributed species throughout the E. coast of Africa", and is very common in the Suez Canal and the Red Sea, while MELVILL and STANDEN had recorded it from the Mekran Coast and Karachi. SMITH had also recorded the species from Port Alfred and the Island of Rodriguez.

In the "Siboga" collection there is a single shell collected on a reef near the Fau Anchorage, West Coast of Gebe Island (St. 149), which I am unable to separate from specimens of *B.* (*H.*) *variabilis* from the Red Sea.

2. *Brachidontes* (*Hormomya*) *subramosus* (Hanley).

1843. *Modiola subramosa* Hanley, Rec. Biv. Shells, p. 241, pl. XXIV, fig. 30.
1844. *Modiola subramosa* Hanley, Proc. Zool. Soc. London, p. 14.
1845. *Modiola subramosa* Catlow & Reeve, Conch. Nomencl., p. 73.
1857. *Modiola subramosa* Reeve, Conch. Icon., X, *Modiola*, pl. VIII, fig. 43.
1857. *Perna* (*Brachyodontes*) *subramosa* Adams, H. & A., Gen. Rec. Moll., II, p. 517.
1860. *Modiola subramosa* Reeve, Elem. Conch., II, p. 172.
1887—89. *Modiola subramosa* and *M. ramosa* Clessin in Martini & Chemn. Conch.-Cab. (N. F.) VIII (3) *Mytilidae*, p. 121, pl. XXXI, fig. 11; p. 134, pl. XXVI, fig. 8.
1890. *Modiola ramosa* and *M.* (*B.*) *subramosa* Paetel, Cat. Conch. Samm., III, pp. 197, 198.
1891. *Modiola subramosa* Böttger, Ber. Senckenberg. Nat. Ges., p. 310.
1896. *Modiola* (*Brachiodontes*) *subramosa* Casto de Elera, Cat. Sist. Filip., p. 794.
1897. *Modiola* (*Brachydontes*) *subramosa* von Martens in Weber's Zool. Ergebn. in Niederl. Ost.-Ind., Süss.-Brackw. Moll., IV, p. 226.
1905. *Modiola subramosa* Hidalgo, Cat. Filip., p. 364.
1905. *Brachyodontes* (*Hormomya*) *snbramosa* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 134.
1911. *Modiola subramosa* Pelseneer, "Siboga" Lamellibranches (Anat.) p. 17, pl. V, figs. 3, 4.
1930. *Brachydontes* (*Hormomya*) *subramosus* Thiele, Faun. Südwest Austral., V, p. 590.

I agree with LYNGE that CLESSIN's *Modiola ramosa* is based only on a slightly distorted shell of *B.* (*H.*) *subramosus*.

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1) DUNKER, W. — Ind. Moll. Guinea Coll. Tams, p. 47 (1853).
2) SMITH, E. A. — Proc. Zool. Soc. London, p. 430 (1891).
3) DAUTZENBERG, P. — Mém. Soc. Zool. France, IV, p. 55 (1891).

B. (*H.*) *subramosus* is distinguished from other closely allied species, such as *B.* (*H.*) *striatulus* (Hanley) and *B.* (*H.*) *subsulcatus* by its very much coarser sculpture; this consists of rather distantly placed, thick and somewhat wavy radial ribs.

Distribution: — *B.* (*H.*) *subramosus* has so far been recorded from Celebes, the Philippines, New Caledonia and the Gulf of Siam.

In the "Siboga" collection it is represented by two young shells collected at Bima Anchorage, Sumbawa (St. 47).

3. *Brachidontes* (*Septifer*) *excisus* (Wiegmann).

1837. *Tichogonia excisa* Wiegmann, Archiv Naturges., I, p. 49.
1848. *Septifer fuscus* Récluz, Rev. Zool., p. 279.
1849. *Septifer fuscus* and *S. excisus,* Récluz, Rev. Mag. Zool., I, p. 128.
1853. *Septifer Troscheli* Dunker, Zeitschr. Malakozool., X, p. 87.
1855. *Tichogonia excisa* Berge, Conchylienbuch, p. 83.
1857. *Mytilus excisus* Reeve, Conch., Icon., X, *Mytilus*, pl. IV, fig. 13.
1857. *Septifer excisus* Adams, H. & A., Gen. Rec. Moll., II, p. 523.
1860. *Mytilus excisus* Reeve, Elem. Conch., II, p. 71.
1865. *Septifer excisus* Fraser, Proc. Zool. Soc. London, p. 196.
1869. *Septifer fuscus* Frauenfeld, Abhandl. Zool.-Bot. Ges. Wien, XIX, p. 885.
1879. *Septifer excisus* von Martens, Monatsb. K. Akad. Wiss. Berlin, p. 741.
1880. *Septifer excisus* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 318.
1886. *Tichogonia* (*Septifer*) *siamensis* and *T.* (*S.*) *excisa* Clessin in Martini & Chemn. Conch. Cab. (N. F.), VIII (3), *Mytilidae*, p. 19, pl. XV, figs. 8, 9, p. 24.
1887. *Mytilus* (*Septifer*) *excisus* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 205.
1890. *Tichogonia excisa* and *T. fusca* Paetel, Cat. Conch. Samm., III, p. 202.
1891. *Septifer excisus* Smith, Proc. Zool. Soc. London, p. 430.
1892. *Septifer excisus* Crosse & Fischer, Journ. Conchyliol., XL, p. 75.
1899. *Septifer excisus* Hedley, Mem. Austral. Mus., II, p. 492.
1902. *Septifer excisus* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1906. *Septifer excisus* Melvill & Standen, Proc. Zool. Soc. London, p. 799.
1909. *Septifer excisus* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 136.
1911. *Septifer excisus* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 22, pl. VI, figs. 7—9.
1919. *Septifer excisus* Odhner, Ark. Zool., XII, N⁰ 6, p. 25.
1919. *Septifer excisus* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXV, p. 45.
1929. *Septifer excisus* Dautzenberg, Faun. Colon. Francais., III, fasc. 4, p. 571.

I agree with LYNGE that *Septifer troscheli* Dunker and *Tichogonia* (*Septifer*) *siamensis* Clessin are both synonyms of *B.* (*S.*) *excisus* (Wiegmann). The species is very variable in outline, form and colour, but the sculpture even in specimens from such widely separated localities as Japan on the one hand and Madagascar on the other, is quite similar.

The shells of this species are much more inflated than those of the closely allied *B.* (*S.*) *bilocularis* (Linn.).

Distribution: — *B.* (*S.*) *excisus* is widely distributed in the Indo-Pacific area, and has also been recorded from the Pleistocene beds of the Red Sea 1).

In the "Siboga" collections the species is represented by two fresh shells from coral reefs near the Anchorage off Labuan Pandan, Lombok (St. 34) and near the Anchorage off Beo,

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1) NEWTON, B. — Geolog. Mag., VII, p. 547 (1900).

Karakelang Islands (St. 131) and a number of dead shells dredged at St. 95 (5° 43′.5 N., 119° 40′ E., depth 522 metres, stony bottom).

4. *Brachidontes* (*Septifer*) *bilocularis* (Linn.). (Plate II, figs. 21—24).

1758. *Mytilus bilocularis* Linnaeus, Syst. Nat. (ed. X), p. 705.
1764. *Mytilus bilocularis* Linnaeus, Mus. Lud. Ulr., p. 540.
1767. *Mytilus bilocularis* Linnaeus, Syst. Nat. (ed. XII), p. 1156.
1785. *Mytilus nicobaricus* Chemnitz, Conch.-Cab., VIII, p. 155, pl. LXXXII, figs. 736 *a*, *b*, 737.
1788. *Mytilus nicobaricus* Schröter, Conch. Cab. Namen Reg., p. 69.
1790. *Mytilus bilocularis* Gmelin, Syst. Nat. (ed. XIII), p. 3352.
1797. Bruguière, Encyclopéd. Méthod., pl. CCXVIII, fig. 5, pl. CCXX, fig. 1.
1798. *Mytilus nicobaricus* Röding, Mus. Boltenianum, p. 158.
1802. *Mytilus bilocularis* Bosc, Hist. Nat. Moll., III, p. 161.
1817. *Mytilus bilocularis* Dillwyn, Descr. Cat., I, p. 307.
1819. *Mytilus bilocularis* Lamarck, Hist. Nat. Anim. sans Vertèb., VI, p. 121.
1825. *Mytilus bilocularis* Sowerby, Cat. Tankerville, p. 22.
1825. *Mytilus bilocularis* Wood, Ind. Test., p. 57, pl. XII, fig. 17.
1831. *Mytilus bilocularis* Deshayes, Encyclopéd. Méthod., II, p. 559.
1836. *Mytilus bilocularis* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 39.
1837. *Tichogonia bilocularis* Wiegmann, Archiv Naturges. I, p. 48.
1843. *Mytilus Bilocularis* Hanley, Rec. Biv. Shells, p. 244.
1848. *Septifer bilocularis* Récluz, Rev. Zool., p. 278.
1848. *Tichogonia Kraussi* Krauss, Südafr. Moll., p. 26.
1849. *Septifer bilocularis*, *S. Kraussi* and *S. Comingii* Récluz, Rev. Mag. Zool., I, pp. 125, 127, 132.
1855. *Tichogonia bilocularis* Berge, Conchylienbuch, p. 83.
1855. *Mytilus bilocularis* Hanley, Ipsa Linn. Conch., p. 139.
1857. *Septifer Kraussi* and *S. bilocularis* Adams, H. & A., Gen. Rec. Moll., II, p. 523.
1858. *Mytilus Nicobaricus* and *M. Cumingianus* Reeve, Conch. Icon., X, *Mytilus*, pl. IX, fig. 42, var. *Kraussi*, fig. 40; pl. XI, fig. 52.
1858. *Septifer bilocularis* Fischer, P., Journ. Conchyliol., VII, p. 340.
1860. *Mytilus Nicobaricus* Reeve, Elem. Conch., II, p. 71.
1862. *Septifer bilocularis* Chenu, Man. Conch., II, p. 158, fig. 783.
1863. *Mytilus* (*Septifer*) *Kraussi* Deshayes, Cat. Moll. Ile Réunion, p. 25.
1869. *Septifer bilocularis* Dunker, Cat. Mus. Godeffroy, IV, p. 114.
1869. *Septifer bilocularis* Lischke, Japan. Meeresconch., I, p. 56.
1869. *Septifer bilocularis* Frauenfeld, Abhandl. Zool.-Bot. Ges. Wien, XIX, p. 885.
1871. *Septifer bilocularis* Lischke, Japan. Meeresconch., II, p. 147.
1874. *Septifer bilocularis* Dunker, Cat. Mus. Godeffroy, V, p. 175.
1874. *Septifer bilocularis* Tapparone-Canefri, Ann. Mus. Civ. Stor. Nat. Genova, VI, p. 566.
1876. *Septifer bilocularis* Tapparone-Canefri, Viag. "Magenta", p. 249.
1877. *Mytilus* (*Aulacomya*) *kraussi* Angas, Proc. Zool. Soc. London, p. 192.
1877. *Tichogonia bilocularis* de Man, Rech. Faun. Madagascar, V, (3), *Mollusques*, p. 8.
1878. *Septifer bilocularis* Kobelt, Illustr. Conchylienbuch, p. 365, pl. CVI, fig. 15.
1879. *Septifer bilocularis* von Martens, Monatsb. K. Akad. Wiss. Berlin, p. 741.
1880. *Septifer bilocularis* and *S. Kraussi* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 318.
1881. *Septifer bilocularis* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 6.
1882. *Septifer bilocularis* Dunker, Ind. Mar. Japon., p. 227.
1885. *Septifer bilocularis* Smith, "Challenger" Lamellibranchia, p. 271.
1885. *Septifer bilocularis* Fischer, P., Man. Conchyliol., p. 960.
1886. *Septifer bilocularis* Cooke, Ann. Mag. Nat. Hist. (5) XVII, p. 140.

1840—1886. *Tichogonia bilocularis, T. Wiegmanii* and *T. kraussi* Küster & Clessin in Martini & Chemn. Conch.-Cab., VIII (3), *Mytilidae* p. 10, pl. II, figs. 11—17, p. 11, pl. II, figs. 6—10 and p. 14, pl. VI, figs. 1—6.
1887. *Mytilus (Septifer) bilocularis* von Martens, Journ. Linn. Soc. London, (Zool.), XXI, p. 205.
1890. *Septifer bilocularis, S. Kraussi* and *S. Nicobaricus* Paetel, Cat. Conch. Samm., III, pp. 201, 202.
1891. *Septifer bilocularis* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 214.
1895. *Septifer bilocularis* Pilsbry, Cat. Mar. Shells Japan, p. 141.
1897. *Septifer Nicobaricus* Sowerby, Marine Shells S. Africa, Suppl., p. 27.
1898. *Septifer Nicobaricus* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 45.
1899. *Septifer nicobaricus* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 184.
1900. *Septifer bilocularis* Smith, Proc. Zool. Soc. London, p. 118.
1901. *Mytilus Cummingianus* Sturany, Denkschr. Kais. Akad. Wiss. Wien. (Math.-Nat.), LXIX, p. 288.
1903. *Septifer bilocularis* Smith, Faun. Geogr. Maldive Laccadive Archipel., II, p. 623.
1904. *Septifer bilocularis* Smith, Ann. Mag. Nat. Hist. (7) XIV, p. 11.
1905. *Septifer bilocularis* Jukes-Brown, Proc. Malacol. Soc. London, VI, p. 223.
1905. *Septifer bilocularis* Dautzenberg & Fischer, H., Journ. Conchyliol., LIII, p. 45.
1906. *Septifer bilocularis* Hidalgo, Cat. Filip., p. 362.
1906. *Septifer bilocularis* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 464.
1906. *Septifer bilocularis* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 316.
1906. *Septifer bilocularis* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 290.
1906. *Septifer bilocularis* Owston, Japan Loochooan Shells, p. 34.
1906. *Septifer bilocularis* Dautzenberg, Journ. Conchyliol., LIV, p. 29.
1906. *Septifer bilocularis* Melvill & Standen, Proc. Zool. Soc. London, p. 799.
1909. *Septifer bilocularis* Lamy, Mém. Soc. Zool. France, XXII, p. 338.
1909. *Septifer bilocularis* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 135.
1909. *Septifer bilocularis* Melvill, Trans. Linn. Soc. London, (Zool.), XIII, p. 123.
1910. *Septifer bilocularis* Hedley, Austr. Ass. Adv. Sci., XII, p. 346.
1911. *Septifer bilocularis* Pelseneer, "Siboga" Lamellibranches (Anat.), pl. VI, figs. 6—10.
1917. *Septifer bilocularis* Odhner, Kungl. Sv. Akad. Handl., LII n⁰. 16, p. 18, figs. 1, 2.
1919. *Septifer bilocularis* Odhner, Ark. Zool., XII (n⁰. 6), pp. 6, 25.
1920. *Mytilus bilocularis* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXVI, p. 334.
1925. *Mytilus bilocularis* Oostingh, Comm. Geol. Inst. Agri. Univ. Wageningen, N⁰. 9, p. 263.
1929. *Septifer bilocularis* Dautzenberg, Faun. Colon. Francais., III, p. 571.
1930. *Septifer bilocularis* Cox, Mon. Geol. Dept. Hunterian Mus. Glasgow Univ., N⁰. 4, p. 151.
1930. *Brachyodontes (Septifer) bilocularis* Thiele, Faun. Südwest Austral., V, p. 590.

In addition to the species included in the synonymy given above SMITH (1885) suggested that *Mytilus pilosus* Reeve (op. cit., pl. VIII, fig. 35) of unknown habitat should be referred to this species. I have unfortunately not been able to see the type of *M. pilosus* and can offer no opinion about it.

ODHNER (1917) recently published a detailed description and figures of the original of the LINNEAN specimen from the collections at Uppsala, and after comparing it with the Australian form suggested that the latter should be separated as a distinct variety.

The "Siboga" specimens are all half grown shells; the height of the largest specimen being 29 mm. In general appearance (Plate II, figs. 21—24) they resemble specimens from Australia and other localities in the collections of the British Museum (Nat. Hist.), London, but their dorsal margin slopes very much more sharply to the outer edge.

Distribution: — *B. (S.) bilocularis* is widely distributed in the Indo-Pacific area and is also found in the Red Sea.

The "Siboga" collection contains specimens from near reef of Batjulmati, Java (St. 7), Bay of Kankamaraän (St. 16), Bay of Labuan Tring, West Coast of Lombok (St. 19), Sailus Ketjil, Paternoster Islands (St. 37), Bay of Badjo, West Coast of Flores (Stat. 50), Madura Bay (St. 51), Anchorage off Dongala, Palos Bay, Celebes (St. 86), East side of Pajunga Island, Kwandang Bay (St. 115), Anchorage off Sawan, Siau Island (St. 125), Anchorage off Laiwui, Coast of Obi Major (St. 142), reef in Sanana Bay, east coast of Sula Besi (Stat. 193), Banda Anchorage (St. 240), Anchorage off Kilsuin, west coast of Kur Island (St. 250), Anchorage between Nusa Besi and the N. E. Point of Timor (St. 282) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

Genus **Modiolus** Lamarck.

1799. *Modiolus* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 87.
1801. *Modiola* Lamarck, Syst. Anim. sans Vertèb., p. 113.
1898. *Modiolus* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 794.
1904. *Modiola* Jukes-Browne, Journ. Conch., XI, p. 101.
1905. *Modiola* Jukes-Browne, Proc. Malacol. Soc. London, VI, p. 218.
1913. *Modiolus* Suter, Man. New Zealand Moll., p. 865.
1925. *Modiolus* Woodring, Miocene Mollusks from Bowden, Jamaica, *Pelecypods* etc., p. 84.
1930. *Volsella* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 98.

For definition of the genus and discussion as to synonymy and relationships reference may be made to the works of DALL and JUKES-BROWNE.

STEWART has replaced the generic name *Modiolus* Lamarck by *Volsella* Scopoli, but as *Mytilus modiolus* of SCOPOLI was a misidentification, I with DALL and JUKES-BROWNE am not prepared to accept this change.

The type of the genus is *Modiolus modiolus* (Linn.).

The genus has been divided into a number of subgenera and I have followed JUKES-BROWNE in reference to the divisions of the genus.

In the "Siboga" collection the genus is represented by species of the subgenera, *Modiolus* s. s. = *Eumodiolus* von IHERING [1]) and *Amygdalum* Megerle [2]).

1. *Modiolus* (*Modiolus*) *elongatus* (Swainson).

1841. *Modiola elongata* Swainson, Exotic Conch., p. 31, fig. 8.
1843. *Modiola Elongata* Hanley, Rec. Biv. Shells, p. 337, pl. XXIV, fig. 28.
1845. *Modiola elongata* Catlow & Reeve, Conch. Nomencl., p. 72.
1855. *Modiola elongata* Berge, Conchylienbuch, p. 84.
1857. *Modiola elongata* Reeve, Conch. Icon., X, *Modiola*, pl. II, fig. 4.
1857. *Perna elongata* Adams, H. & A., Gen. Rec. Moll., II, p. 517.
1860. *Modiola elongata* Reeve, Elem. Conch., II, p. 72, pl. XXIX, fig. 172.
1874. *Modiola elongata* Tapparone-Canefri, Ann. Mus. Civ. Stor. Nat. Genova, VI, p. 566.
1887. *Modiola elongata* Clessin in Martini & Chemn. Conch.-Cab. (N. F.), VIII, (3) *Mytilidae*, p. 97, XXVII, fig. 1.
1890. *Modiola securis* var. *elongata* Paetel, Cat. Conch. Samm., III, p. 197.
1905. *Modiola elongata* Hidalgo, Cat. Filip., p. 363.
1909. *Modiola elongata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 131.
1911. *Modiola elongata* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 18, 19, pl. IV, figs. 6—9.

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1) IHERING, H. VON — Proc. Malacol. Soc. London, IV, p. 87 (1900). See also JUKES-BROWNE, op. cit., p. 221 (1905).

2) MEGERLE, v. M., J. K. — Mag. Ges. Naturfor. Freund., V, p. 69 (1811), and JUKES-BROWNE, op. cit., p. 221 (1905).

M. (*M.*) *elongatus* is allied to *M.* (*M.*) *philippinarum* Hanley, *M.* (*M.*) *metcalfei* Hanley and *M.* (*M.*) *arata* Hanley, but is easily distinguished by its comparatively much elongated and narrow shell, a moderately developed post-dorsal wing and rather feeble sculpture.

Distribution: — *M.* (*M.*) *elongatus* has so far been recorded from the Moluccos, Aru Islands, Penang and the Gulf of Siam. The locality Antilles, as noted by CLESSIN for the shell in the PAETEL collection, is certainly erroneous.

The "Siboga" collection has two shells from St. 1 (Madura Strait, 7° 27'.5 S., 113° 8'.5 E.), and St. 320 (6° 5' S., 114° 7' E.).

2. *Modiolus* (*Modiolus*) *philippinarum* (Hanley). (Plate II, figs. 25, 26).

1843. *Modiola Philippinarum* Hanley, Rec. Biv. Shells, p. 235, pl. XXIV, fig. 26.
1844. *Modiola Philippinarum* Hanley, Proc. Zool. Soc. London, p. 15.
1845. *Modiola philippinarum* Catlow & Reeve, Conch. Nomencl., p. 72.
1857. *Modiola Philippinarum* Reeve, Conch. Icon., X, *Modiola*, pl. I, fig. 1.
1857. *Perna Philippinarum* Adams, H. & A., Gen. Rec. Moll., II, p. 517.
1870. *Perna fulgida* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1874. *Modiola Philippinarum* Tapparone-Canefri, Ann. Mus. Civ. Stor. Nat. Genova, VI, p. 566.
1882. *Perna Philippinarum* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 40.
1886. *Modiola fulgida* (=*philippinarum*) Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 140.
1890. ? *Modiola Philippiana* Paetel, Cat. Conch. Samm., III, p. 197.
1896. *Modiola Philippinarum* Casto de Elera, Cat. Sist. Filip., p. 793.
1899. *Modiola philippinarum* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 184.
1905. *Modiola philippinarum* Hidalgo, Cat. Filip., p. 364.
1906. *Modiola philippinarum* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 254.
1907. *Modiola philippinarum* Melvill & Standen, Proc. Zool. Soc. London, p. 800.
1909. *Modiola Philippinarum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 132.
1911. *Modiola australis* Pelseneer (nec Gray), "Siboga" Lamellibranches (Anat.), p. 117, pl. V, fig. 2.
1914. *Modiola philippinarum* Iredale, Proc. Zool. Soc. London, p. 667.
1919. *Modiola Philippinarum* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXV, p. 110.

Modiolus (*Modiolus*) *philippinarum* has often been confused with *M. australis* Gray from North Australia, but there can be no question of the two species being distinct. The young shells of the two species are rather difficult to separate but the adults of the two species can be easily distinguished. *M.* (*M.*) *philippinarum* is more inflated, has a well developed post-dorsal wing and the posterior margin of the wing forms a broad arc with the nearly straight dorsal margin, the umbones are much more prominent and more tumid, while the lines of sculpture are more impressed. In *M. australis* the shells are, further, distinctly compressed and distorted, somewhat behind the umbonal region.

According to VON MARTENS[1]) *M. rumphii* of PHILIPPI is a synonym of this species.

Distribution: — *M.* (*M.*) *philippinarum* has a wide distribution in the Indo-Pacific and the Red Sea.

In the "Siboga" collection the species is represented by a fair series of shells from Anchorage off Pulu Sarassa, Postillon Islands (St. 43), Bay of Bima (St. 47), Bay of Badjo, west coast of Flores (St. 50), Anchorage between Gisser Island and Ceram Laut (St. 172), Banda

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1) MARTENS, E. VON. — Rumphius Gedenkboek, Moll., p. 128 (1902).

Anchorage (St. 240), Buka or Cyrus Bay (St. 299), Anchorage east of Dangar Besar, Saleh Bay (St. 313) and Anchorage east of Sailus Besar, Paternoster Islands (St. 315).

3. *Modiolus* (*Modiolus*) *flavidus* (Dunker). (Plate II, figs. 27, 28).

1856. *Volsella flavida* Dunker, Proc. Zool. Soc. London, p. 364.
1857. *Perna flavida* Adams, H. & A., Gen. Rec. Moll., II, p. 517.
1860. *Modiola flavida* Reeve, Conch. Icon., X, *Modiola*, pl. X, fig. 77 (sp. 64).
1882. *Modiola flavida* Dunker, Ind. Moll. Mar. Japon., p. 223.
1887. *Modiola flavida* Clessin in Martini Chemn. Conch.-Cab. (N. F.), VIII (3), *Mytilidae*, p. 112, pl. XXVIII, fig. 5.
1890. *Modiola flavida* Paetel, Cat. Conch. Samm., III, p. 196.
1896. *Modiola flavida* Casto de Elera, Cat. Sist. Filip., p. 793.
1903. *Modiola flavida* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 623.
1905. *Modiola flavida* Hidalgo, Cat. Filip., p. 363.
1911. *Modiola arata* Pelseneer (nec Reeve), "Siboga" Lamellibranches (Anat.), p. 16, pl. IV, fig. 4.

The soft parts of this species were described by PELSENEER as those of *M. arata* Reeve. It is a much less elongate, proportionately much deeper and more swollen species, with a much narrower post-dorsal wing and without any definite keel at the anterior side; such as is found in *M. arata*.

Distribution: — *M.* (*M.*) *flavidus* was described from the Bay of Manilla in the Philippines, and has also been recorded from Japan.

The "Siboga" Expedition collected mostly half grown shells from Macassar (St. 71), Banda Anchorage (St. 240), Tual Anchorage, Kei Islands (St. 258), Rumah Kuda Bay, Roma Island (St. 279) and Anchorage east of Dangar Besar, Saleh Bay (Stat. 313).

4. *Modiolus* (*Modiolus*) *dubius* sp. nov. (Plate II, figs. 29—31).

The following is a description of this new species: — Species of small size; cylindrically-oblong, narrow, widest behind middle of shell; valves moderately convex in front of centre of shell; umbones situated some distance from anterior margin, moderately inflated, umbonal ridge strong, rounded, becoming compressed and broader towards posterior end; dorsal margin somewhat raised from centre to posterior margin, with which it forms an angulate somewhat curved margin; ventral margin slightly concave; posterior margin narrowly rounded, lower half almost straight; anterior margin separated from umbonal region by a deep notch, narrowly rounded; sculpture consisting of low, somewhat irregular concentric threads, most of which appear to correspond with regions of growth. Periostracum of a pale greenish yellow colour; interior white, not glossy. Length 7.5 mm.; height 2.6 mm.; diameter 2.2 mm.

Habitat: — The Holotype, on which the above description is based, and a young left valve were brought up in a trawl at St. 297 (10° 39′ S., 123° 40′ E.; depth 520 meter) to the east of Roti Island.

Remarks: — The new species for which I have proposed the name *Modiolus* (*Modiolus*) *dubius* does not correspond to any previously known species of the genus. Its subgeneric position is rather doubtful, but it appears to come nearer most species of the subgenus *Modiolus*, *s. s.*

5. *Modiolus* (*Amygdalum*) *watsoni* Smith. (Plate II, figs. 32, 33).

1885. *Modiola watsoni* Smith, "Challenger" Lamellibranchia, p. 275, pl. XVI, figs. 5—5*c*.
1890. *Modiola Watsoni* Paetel, Cat. Conch. Samm., III, p. 198.
1891. *Modiola sp.* Wood-Mason & Alcock, Ann. Mag. Nat. Hist., (6) VII, p. 19.
1895. *Modiola watsoni* Smith, Ann. Mag. Nat. Hist., (6) XVI, p. 14.
1896. *Modiola* (*Trachidontes*) *Watsoni* Casto de Elera, Cat. Sist. Filip., p. 794.
1904. *Modiola watsoni* Smith, Ann. Mag. Nat. Hist., (7) XIV, p. 11.
1905. *Modiola Watsoni* Hidalgo, Cat. Filip., p. 364.
1906. *Modiola* (*Amygdalum*) *watsoni* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 254.
1911. *Modiola Watsoni* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 17, pl. IV, figs. 10, 11; pl. V, fig. 1.

I have compared the type-shell of this species from west of the Island of Luzon, Philippines (St. 207 "Challenger") with the shells collected by the "Siboga" Expedition and can find no differences between them. The "Siboga" shells are somewhat larger and the shell also is consequently a bit thicker. The measurements of the largest shell are: — Length 52 mm., height 28.4 mm., diameter 15.8 mm.

Distribution: — *M.* (*A.*) *watsoni* was originally described from the Philippines, but was later discovered in the Indian Ocean, off the coasts of Ceylon and in the Gulf of Oman.

The "Siboga" collection contains specimens from St. 5 (7° 46′ S., 114° 30′.5 E.; depth 330 metres), St. 52 (9° 3′.4 S., 119° 56′.7 E.; depth 959 metres), St. 88 (0° 34′.6 N., 119° 8′.5 E.; depth 1301 metres), St 178 (2° 40′ S., 128° 37′.5 E.; depth 835 metres), St. 208 (5° 39′ S., 122° 12′ E.; depth 1886 metres), St. 212 (5° 54′.5 S., 120° 19′.2 E.; depth 462 metres), St. 271 (5° 46′.7 S., 134° 0′ E.; depth 1788 metres), St. 284 (8° 43′.1 S., 127° 16′.7 E.; depth 828 metres), St. 300 (10° 48′.6 S., 123° 23′.1 E.; depth 918 metres) and St. 314 (7° 36′ S., 117° 30′.8 E.; depth 694 metres).

Modiolus spp.

In addition to the species enumerated above there are two very young shells from St. 88 (0° 34′.6 N., 119° 8′.5 E.) and St. 126 (3° 27′.1 N., 125° 18′.7 E.) respectively, which it is not possible to identify specifically.

Genus **Musculus** Röding.

1798. *Musculus* Röding, Mus. Boltenianum, p. 156.
1838. *Modiolaria* Beck in Robert Comm. Sci. Isl. Groenland, Moll. pl. XVII.
1846. *Modiolaria* Lovèn, Ind. Moll. Scand., p. 33.
1847. *Lanistina* Gray, Proc. Zool. Soc. London. p. 199.
1889. *Modiolaria* Clessin in Martini, Chemn. Conch.-Cab., (N. F.), VIII (3), *Mitiliacea*, p. 140.
1898. *Modiolaria* Dall, Trans. Wagner Free Inst. Sci, Philadelphia, III, p. 804.
1905. *Modiolaria* Jukes-Browne, Proc. Malacol. Soc. London, VI, p. 223.
1913. *Modiolaria* Suter, Man. New Zealand Moll., p. 868.
1915. *Musculus* Dall, Nautilus, XXVIII, p. 138.
1915. *Musculus* Iredale, Journ. Conch., XIV, p. 342.

For a detailed account of the controversy in reference to the earlier name *Modiolaria* reference may be made to Dall's work (1898), cited above. In view, however, of Iredale having selected *M. discors* (Linn.) as the type of *Musculus* Röding, this name replaces the commonly accepted *Modiolaria.*

A good description of the genus was published by JUKES-BROWNE, but from the examination of the available material at my disposal I am unable to agree that it is possible to distinguish any subgeneric divisions based on the presence or absence of radial sculpture on certain areas of the valves.

1. *Musculus cuneatus* (Gould). (Plate II, figs. 34, 35).

1861. *Modiolaria cuneata* Gould, Proc. Boston Soc. Nat, Hist., VIII, p. 38.
1862. *Modiolaria cuneata* Gould, Otia Conch., p. 176.
1885. *Modiolaria cuneata* Smith, "Challenger" Lamellibranchia, p. 278, pl. XVI, fig. 7.
1891. *Modiolaria marmorata* Smith, (ex parte), Proc. Zool. Soc. London, p. 393.
1904. *Modiolaria cuneata* Pritchard & Gatliff, Proc. Roy. Soc. Victoria, XVII, p. 254.
1906. *Modiolaria cuneata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 464.
1909. *Modiolaria cuneata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 139.
1910. *Modiolaria cuneata* Hedley, Austral. Ass. Adv. Sci., XII, p. 346.
1911. *Modiolaria marmorata* Pelseneer, (nec Forbes), "Siboga" Lamellibranches (Anat.), p. 20, pl. V, figs. 6, 7, 9.
1915. *Modiolaria cuneata* Bartsch, Bull. U. S. Nat. Mus., XCI, p. 189, pl. LII, figs. 5, 6.

The specimens, which I refer to this species, agree in all details with the description and figures of the Cotypes of GOULD's *M. cuneatus* published by BARTSCH. The "Siboga" shells are only about half the size of the specimens figured by BARTSCH.

Distribution: — From the published records of the species *M. cuneatus* appears to have a wide distribution in the Indo-Pacific Area.

The "Siboga" collection contains specimens from Sailus Ketjil, Paternoster Islands (St. 37), St. 164 (1° 42′.5 S., 130° 47′.5 E., depth 32 metres) and Anchorage off Pulu Jedan, east coast of Aru Islands (St. 273).

2. *Musculus miranda* (Smith).

1884. *Modiolaria miranda* Smith, E. A., Rep. Voy. "Alert", p. 108, pl. VII, fig. N.
1906. *Modiolaria miranda* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 464.
1909. *Modiolaria miranda* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 140.
1910. *Modiolaria miranda* Hedley, Austral. Ass. Adv. Sci., XII, p. 346.
1917. *Modiolaria miranda* Odhner, Kungl. Sv. Akad. Handl., LII, n° 16, 20.

M. miranda, as SMITH pointed out, resembles *M. varicosus* in the outline of the shell, but is distinguished by the greater coarseness and subgranular character of the anterior and posterior ribs produced by the concentric ribs crossing over the radial ones.

Distribution: — *M. miranda* was discovered in the Dundas Strait, and has since been recorded by HEDLEY and ODHNER from Australia, and by LYNGE from the Gulf of Siam.

In the "Siboga" collection the species is represented by a single adult shell from Sailus Ketjil, Paternoster Islands (St. 37) and three young valves from St. 164 (1° 42′.5 S., 130° 47′.5 E.).

3. *Musculus impactus* (Hermann). (Plate II, figs. 36, 37).

1780. Born, Test. Mus. Caes. Vindobon., p. 121, text-fig. d.
1782. *Mytilus impactus* Hermann, Naturforscher, XVII, pl. III, figs. 5—8.
1784. *Mytilus cor* Martyn, Universal. Conch., II, pl. LXXVII.

1785. *Mytilus discors, Oceani Australis* etc. Chemnitz, Conch.-Cab., VIII, p. 195, pl. LXXXVI, figs. 768 (1, 2).
1790. *Mytilus discors* Gmelin (non Linn.), Syst. Nat. (ed. XIII), p. 3356.
1797. *Mytilus Lamatus* Humphrey, Mus. Calonnianum, p. 43.
1797. Bruguière, Encyclopéd. Méthod., pl. CCIV, figs. 5*a*, *b*.
1817. *Mytilus impactus* Dillwyn, Descr. Cat., I, p. 320.
1819. *Mytilus discors* Lamarck (non Linn.), Anim. sans Vertèb., VI, p. 114.
1825. *Mytilus impactus* Wood, Ind. Test., p. 59, pl. XII, fig. 40.
1836. *Modiola discors* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 23.
1843. *Modiola impacta* Hanley, Rec. Biv. Shells, p. 241.
1845. *Modiola impacta* Catlow & Reeve, Conch. Nomencl., p. 72.
1857. *Modiola impacta* Reeve, Conch. Icon., X, *Modiola*, pl. IX, fig. 64.
1857. *Crenella* (*Modiolaria*) *cor* Adams, H. & A., Gen. Rec. Moll., II, p. 515,
1860. *Modiola impacta* Reeve, Elem. Conch., II, p. 72.
1872. *Crenella impacta* von Martens, Malakozool. Blätt., XIX, p. 25.
1873. *Crenella discors* Hutton (non Linn.), Cat. New Zealand Moll., p. 78.
1880. *Crenella impacta* Hutton, Man. New Zealand Moll., p. 168.
1884. *Modiolaria impacta* Tryon, Struct. Syst. Conch., III, p. 264, pl. CXXVIII, fig. 99.
1889. *Modiolaria impacta* Clessin in Martini Chemn. Conch.-Cab. (N. F.), VIII (3), *Mytilacea*, p. 147, pl. XXXIV, fig. 9.
1890. *Crenella* (*Modiolaria*) *cor* and *C.* (*M.*) *impacta* Paetel, Cat. Conch. Samm., III, p, 194.
1901. *Crenella impacta* Suter, Trans. New Zealand Inst., XXXIV, p. 223.
1904. *Modiolaria impacta* Pritchard & Gatliff, Proc. Roy. Soc. Victoria, XVII, p. 253.
1907. *Modiolaria impacta* Suter, Trans. New Zealand Inst., XXXIX, p. 263.
1913. *Modiolaria impacta* Suter, Man. New Zealand Moll., p. 869.
1915. *Modiolaria impacta* Suter, Man. New Zealand Moll., Plates, pl. LVIII, fig. 7.

Musculus impactus is closely allied to *M. cumingianus* (Reeve), but the shell of the latter is comparatively much more elongated and not so high or gibbous. The anterior radial ribs of *M. impactus* are also much stronger and more granular. I figure a shell from New Zealand.

Distribution: — *M. impactus* has so far been recorded from New Zealand and Australia.

In the "Siboga" Collection there is a specimen from the Anchorage between Nusa Besi and the N. E. Point of Timor (St. 282), which I am unable to separate from specimens of *M. impactus* from New Zealand. I also refer, with some doubt, a very young shell from St. 282 to this species.

Genus **Lithophaga** Röding.

1798. *Lithophaga* Röding, Mus. Boltenianum, p. 156.
1811. *Lithophagus* Megerle, Mag. Ges. Naturf. Freunde Berlin, V, p. 69.
1857. *Lithophaga* Adams, H. & A., Gen. Rec. Moll., II, p. 518.
1858. *Lithodomus* Reeve, Conch. Icon., X, *Lithodomus* pl. I (explanation).
1886. *Lithodomus* Fischer, P., Man. Conchyliol., p. 969.
1898. *Lithophaga* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 798.

The genotype of *Lithophaga* Röding is *Lithophaga lithophaga* (Linn.), but this species is, as most conchologists agree, a composite one; the better known of the two types confused by Linnaeus is *Lithophaga dactylus* (Sowerby) and this was suggested as the type of the subgenus *Lithophaga s. s.*, by Dall.

The second subgenus represented in the "Siboga" collection is *Botula* Mörch [1]), with *Lithophaga* (*Botula*) *cinnamomea* (Lamarck) as its type.

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[1]) Mörch, O. A. L., *Cat. Yoldi*, II, p. 55, (1853).

1. *Lithophaga* (*Lithophaga*) *teres* (Philippi). (Plate II, figs. 38, 39).

1785. *Mytilus lithophagus* Chemnitz (ex parte, nec Linn.), Conch.-Cab., VIII, p. 124, pl. LXXXII, fig. 729.
1846. *Modiola teres* Philippi, Abbild. Beschreib. Conch., II, p. 148, *Modiola*, pl. I, fig. 3.
1857. *Lithodomus teres* Reeve, Conch. Icon., X, *Lithodomus*, pl. III, fig. 13.
1857. *Lithophagus teres* Adams, H. & A., Gen. Rec. Moll., II, p. 519.
1860. *Lithodomus teres* Reeve, Elem. Conch., II, p. 74.
1863. *Modiola teres* Deshayes, Cat. Moll. Réunion, p. 23.
1869. *Lithophagus teres* Dunker, Cat. Mus. Godeffroy, IV, p. 114.
1874. *Lithophagus teres* Dunker, Cat. Mus. Godeffroy, V, p. 175.
1877. *Modiola teres* Liénard, Cat. Ile Maurice, p. 66.
1880. *Lithodomus teres* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 319.
1883. *Lithophaga teres* Dunker in Martini Chemn. Conch.-Cab. (N. F.), VIII (3), *Lithophaga*, p. 13.
1884. *Lithodomus teres* Smith, Rept. Voy. "Alert", p. 109,
1887. *Lithodomus teres* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 206.
1888. *Dactylus erythræensis* Jousseaume, Mém. Soc. Zool. France, I, p. 218.
1890. *Lithodomus teres* Paetel, Cat. Conch. Samm., III, p. 206.
1893. *Lithodomus gracilis* Dautzenberg (nec Philippi), Bull. Soc. Zool. France, XVIII, p. 84.
1898. *Lithophagus teres* Melvill & Standen, Journ. Conch., IX, p. 81.
1899. *Lithophagus teres* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 185.
1899. *Lithophaga teres* Hedley, Mem. Austral. Mus., III, p. 492.
1905. *Lithodomus teres* Hidalgo, Cat. Filip., p. 365.
1906. *Lithodomus teres* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 312.
1906. *Lithophaga teres* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 464.
1906. *Lithophagus gracilis* Standen & Leicester (nec Philippi), Ceylon Pearl Oyster Rept., V, 290.
1909. *Lithodomus teres* Melvill, Trans. Linn. Soc. London (Zool.) XIII, p. 124.
1910. *Lithophaga teres* Hedley, Austral. Ass. Adv. Sci., XII, p. 346.
1911. *Lithodomus teres* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 130.
1911. *Lithodomus teres* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 21, pl. VII, fig. 1.
1919. *Lithodomus teres* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXV, p. 252.

L. (*L.*) *teres* is closely allied to *L. gracilis* (Philippi) 1), but is distinguished by its much smaller size, much more cylindrical shape and the posterior margin of the valves, which is much less flattened, von Martens 2) and following him Lynge have, however, suggested that the two species cannot be separated from one another, while Dunker's 3) suggestion that *L. teres* is probably only a variety of the West Indian *L. niger* (d'Orbigny), is, as shown by Lynge, quite untenable. Probably several records of *L. gracilis* from the Indo-Pacific are really based on specimens of *L. teres*.

Distribution: — *L.* (*L.*) *teres* is widely distributed in the Indo-Pacific.

In the "Siboga" collection it is represented by shells collected at Macassar (St. 71), Anchorage off Lai Wui, Coast of Obi Major (St. 142), Anchorage off Seget, West entrance of Selee Strait (St. 163) and Anchorage between Gisser and Ceram Laut (St. 172).

2. *Lithophaga* (*Lithophaga*) *nasuta* (Philippi). (Plate II, figs. 40, 41).

1846. *Modiola nasuta* Philippi, Abbild. Beschreib. Conch., II, p. 149, *Modiola*, pl. I, fig. 2.
1857. *Lithophaga nasuta* Adams, H. & A., Gen. Rec. Moll., II, p. 519.

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1) Philippi, R. A. — Abbild. Beschreib. Conch., III, p. 19, *Modiola*, pl. II, fig 1 (1851).
2) Martens, E. von. — Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 319 (1880).
3) Dunker, W. — Op. cit., p. 13 (1883).

1860. *Lithodomus nasutus* Reeve, Elem. Conch., II, p. 74.
1869. *Lithodomus nasutus* von Martens, Von der Deckens Reise, p. 66.
1871. *Lithophagus nasutus* Lischke, Japan. Meeresconch., p. 152.
1879. *Lithodomus nasuta* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 741.
1882. *Lithophaga nasuta* Dunker (ex parte) in Martini Chemn. Conch.-Cab. (N. F.), VIII (3), *Lithophaga*, p. 5, pl. I, fig. 5, pl. II, figs. 7, 8.
1882. *Lithophaga nasuta* Dunker, Ind. Moll. Mar. Japon., p. 226.
1887. *Lithodomus nasuta* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 206.
1891. *Lithodomus nasutus* Paetel, Cat. Conch. Samm., III, p. 199.
1895. *Lithophaga nasuta* Pilsbry, Cat. Mar. Moll. Japan, p. 140.
1903. *Lithodomus nasutus* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 623.
1905. *Lithodomus nasutus* Hidalgo, Cat. Filip., p. 365.
1906. *Lithophaga nasuta* Owston, Japan. Loochooan Shells, p. 34.

Reeve's figure of *Lithodomus nasutus* [1]), as was pointed out by Lischke is certainly not of the same species as *Modiola nasuta* of Philippi. Reeve's locality for the species, West Indies, is also doubtful for Philippi gives Pacific Ocean as probably the area whence his types of the species were collected, and Dunker's specimens of the species from the Cuming Collection were from the Philippines. Dunker's figure differs from Philippi's in the general outline, but from the specimens, which I have examined, it appears to represent the species more correctly.

The characteristic features of the species appear to be the situation of the umbones near the extreme anterior end, the anterior end narrower than the rest of the shell, and the shell valves compressed posteriorly with the margin evenly rounded.

Distribution: — *L.* (*L.*) *nasuta* has been recorded from Japan and Philippines in the Pacific and from Singapore and Mozambique Coast and the surrounding area in the Indian Ocean.

In the "Siboga" collection the species is represented by three complete shells and a single valve from Anchorage off Dongala, Palos Bay, Celebes (St. 86), Pulu Sanguisiapo, Sulu Archipelago (St. 93), Anchorage off the south point of Kabaëna Island (St. 209) and Ambon Anchorage (St. 231).

3. *Lithophaga* (*Lithophaga*) *levigata* (Quoy & Gaimard). (Plate II, figs. 42, 43).

1835. *Lithodomus levigata* Quoy & Gaimard, Voy. "Astrolabe", III, p. 464, pl. LXXVIII, figs. 17, 18.
1899. *Lithophaga levigata* Hedley, Mem. Austral. Mus., III, p. 492.

I agree with Hedley that *L.* (*L*). *levigata* is the same form which has been generally recorded as *L.* (*L.*) *malaccana* (Reeve) [2]) in literature, but with the material available it is not possible for me to be definite as to which of the various forms described by Reeve and Dunker should be relegated to the synonymy of *L.* (*L.*) *levigata*.

Lynge is right in assuming that *L.* (*L*) *levigata*, which he called *L.* (*L.*) *malaccana*, is very variable, but much more of fresh material is required before its range of variation can be properly understood. The "Siboga" specimens differ in reference to the posterior margin being almost truncate and straight or somewhat curved.

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1) Reeve, L. — Conch. Icon., X, *Lithodomus*, pl. II, fig. 10*a*, *b* (1857).

2) Reeve, L. — Conch. Icon., X, *Lithodomus*, pl. IV, fig. 20 (1857). I have purposely refrained from giving a detailed synonymy of *L. malaccana* in the above account, as I am not quite certain regarding the material which has been referred as *L. malaccana* in literature.

Distribution: — *L.* (*L.*) *levigata* was described from Port Dorey, New Guinea, but appears to be widely distributed in the Indo-Pacific area.

The "Siboga" Expedition collected shells of this species from Anchorage off Labuan Pandan, Lombok (St. 34), Sailus Ketjil, Paternoster Islands (St. 37), Bay of Bima (St. 47), Bank between Islands of Bahuluwang and Tambolungan, South of Saleyer (St. 66), Anchorage off Dongala, Palos Bay, Celebes (St. 86), Pulu Sanguisiapo, Sulu Archipelago (St. 93), east side of Pajunga Island, Kwandang Bay (St. 115), Anchorage off Sawan, Siau Island (St. 125), Anchorage north of Damar Island (St. 144), Anchorage off the South Point of Kabaëna Island (St. 209), Ambon Anchorage (St. 231), Nalahia Bay, Nusa Laut Island (St. 234), Tual Anchorage, Kei Islands (St. 258), St. 260 (2.3 miles North, 63° West from the North Point of Nuhu Jaan, Kei Islands) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

4. *Lithophaga* (*Lithophaga*) sp.

A single young shell collected at Wunoh Bay, North West coast of Waigeu Island (St. 152) appears to be allied to *L. malayana* (Philippi) 1), but with only a single immature shell it is impossible to be certain about its identification.

5. *Lithophaga* (*Botula*) *cinnamomea* (Lamarck).

1685. *Musculus exiguus fuscus* etc. Lister, Hist. Conch., pl. CCCLIX, fig. 197.
1785. *Mytilus cinnamominus* etc. Chemnitz, Conch.-Cab., VIII, p. 152, pl. LXXXII, fig. 731.
1788. *Mytilus cinnamominus* Schröter, Conch.-Cab. Namen Reg., p. 68.
1797. *Mytilus brunneus* Humphrey, Mus. Calonnianum, p. 43.
1817. Savigny, Descr. Egypte, pl. XI, figs. 2, 1—3.
1819. ? *Mytilus cinnamomea* and *M. silicula* Lamarck, Anim. sans Vertèb., VI, pp. 114, 115.
1831. ? *Mytilus cinnamomeus* Deshayes, Encyclopéd. Méthod., II, p. 566.
1836. ? *Modiola cinnamomea* and *M. silicula* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 25.
1840. *Modiola arcuata* Dufo (nec Lam.), Ann. Sci. Nat. (Zool.), XIV, p. 215.
1843. *Modiola cinnamomea* Hanley, Rec. Biv. Shells, p. 238, pl. XXIV, fig. 24.
1844. *Modiola cinnamomea* Potiez & Michaud, Gal. Douai, II, p. 130.
1845. *Modiola cinnamomea* Catlow & Reeve, Conch. Nomencl., p. 72.
1857. *Lithophaga silicula* Adams, H. & A., Gen. Rec. Moll. II, p. 519.
1858. *Lithodomus cinnamominus* Reeve (ex parte), Conch. Icon., X, *Lithodomus*, pl. I, figs. 5 *a*, *b*.
1860. *Lithodomus cinnamominus* Reeve, Elem. Conch., II, p. 73.
1863. *Modiola cinnamomea* Deshayes, Cat. Moll. Réunion, p. 23.
1866. *Modiola cinnamomea* Mabille & Le Mesle, Journ. Conchyliol., XIV, p. 118.
1870. *Lithophaga cinnamomea* MacAndrew, Ann. Mag. Nat. Hist. (4) VI, p. 448.
1874. *Lithophaga cinnamomius* (sic) Dunker, Cat. Mus. Godeffroy, V, p. 175.
1875. *Lithophaga cinnamomius* (sic) Dunker, Cat. Mus. Godeffroy, VI, p. 96.
1877. *Modiola cinnamonila* (sic) Liénard, Cat. Ile Maurice, p. 66.
1879. *Modiola cinnamomea* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 741.
1880. *Modiola cinnamomea* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 318.
1883. *Lithophaga fusca* Dunker (ex parte) in Martini Chemn. Conch.-Cab. (N. F.) VIII (3), *Lithophaga*, p. 25, pl. VI, figs. 8, 9.
1886. *Lithophaga cinnamomeus* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 141.
1887. *Lithodomus* (*Botula*) *cinnamomeus* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 207.
1888. *Botula cinnamomea* Jousseaume, Mém. Soc. Zool. France, I, p. 216.

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1) Philippi, R. A. — Abbild. Beschreib. Conch., III, p. 21, *Modiola*, pl. II, fig. 6 (1851).

1889. *Lithodomus cinnamomeus* Crosse & Fischer, Journ. Conchyliol., XXXVII, p. 291.
1890. *Lithophaga fusca* Clessin in Martini Chemn. Conch.-Cab. (N. F.), VIII (3), *Mytilidae*, p. 160. pl. II, fig. 3.
1890. *Modiola cinnamomea* Paetel, Cat. Conch. Samm., III, p. 196.
1891. *Lithodomus cinnamomeus* Fischer, P., Bull. Soc. d'Hist. Nat. d'Autun, IV, p. 129.
1896. *Modiola cinnamomea* Casto de Elera, Cat. sist. Filip., p. 793.
1899. *Modiola cinnamomea* Melvill & Standen, Journ. Linn. Soc. London (Zool.). XXVII, p. 184.
1901. *Lithophaga cinnamomea* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXIX, p. 288.
1902. *Lithodomus cinnamomina* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1903. *Lithodomus cinnamominus* Smith, Faun. Geogr. Maldive, Laccadive Archipel., p. 623.
1905. *Lithodomus cinnamomina* Hidalgo, Cat. Filip., p. 365.
1906. *Lithodomus cinnamomeus* Melvill & Standen, Proc. Zool. Soc. London, p. 802.
1906. *Lithodomus* (*Botula*) *cinnamomina* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 312.
1906. *Lithophaga cinnamomea* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 464.
1909. *Lithodomus cinnamomeus* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 123.
1909. *Lithodomus* (*Botula*) *cinnamomea* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 132.
1909. *Lithodomus* (*Botula*) *cinnamomina* Lamy, Mém. Soc. Zool. France, XXII, p. 339.
1910. *Lithophaga cinnamomea* Hedley, Austral. Ass. Adv. Sci., XII, p. 346.
1919. *Lithodomus cinnamomina* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXV, p. 348.
1920. *Modiola cinnamomea* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXVI, p. 233.
1926. *Lithophaga* (*Botula*) *cinnamomina* Pallary, Mém. Inst. Egypt., XI, p. 115, pl. XV, figs. 8, 1—3.

DALL [1]) is certainly wrong in assuming that the specimens figured by CHEMNITZ and on which LAMARCK founded the species *Mytilus cinnamomea* must have been West Indian. The Chemnitzian figures resemble very closely Indo-Pacific shells, and in view of CHEMNITZ first discussing the shells of his species from the SPENGLER collection and which were from the Nicobar Islands, there is every reason to refer his figures also to the Indo-Pacific species. I am not clear why DALL considered *Lithophaga* (*Botula*) *fusca* (Gmelin) to be definitely an East Indian species, for GMELIN does not mention the provenance of this species, and his description is too brief to enable this question to be settled with any certainty. I am unfortunately not in a position to offer a definite opinion on the question of the East and West Indian forms being conspecific or distinct, but I am inclined to gravely doubt such a wide distribution for a boring mollusc of more or less sedentary habits, and unless the two forms are definitely shown as identical, would much prefer to consider them as distinct.

The "Siboga" specimens, which I refer to the species, are all rather young shells, and were obtained in Sapeh Strait (St. 49*a*), on the Bank between the Island of Bahuluwang and Tambolungan, South of Saleyer (St. 66), at Pulu Sanguisiapo, Sulu Archipelago (St. 93), the Anchorage off North Ubian (St. 99), Anchorage near Seget, west entrance of Selee Strait (St. 163) and Tual Anchorage, Kei Islands (St. 258).

Genus **Solamen** Iredale.

1924. *Solamen* Iredale, Proc. Linn. Soc. N. S. Wales, XLIX, p. 198.

This genus was established by IREDALE for the unique species *S. rex*. *Solamen* is closely allied to *Arcoperna*[1] Conrad, and may eventually have to be combined with it. The form, which I describe under the name *S. sibogae*, could with equal justification be referred to *Arcoperna*.

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[1]) DALL, W. H. Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 797 (1898).

1. *Solamen sibogae* sp. nov. (Plate II, figs. 44, 45).

The following is a description of this new species: — Species of large size, globose, very inflated; shell moderately thick, transluscent; equivalve, inaequilateral; umbones very large, prominent, obliquely inclined forwards and inwards, almost touching in the middle line; anterior margin very convexly arched, from above the middle suddenly curving inwards to pass gradually into the ovately rounded ventral border; posterior margin slightly curved, shorter than anterior; hinge-line greatly arched, very narrow, with an internal ligamental groove, sculpture consisting of very regular, fine radials separated by thread-like interspaces; concentric sculpture consisting of few growth-lines only.

Length 25 mm.; height 18.3 mm.; diameter 19.2 mm.

Habitat: — The unique Holotype was dredged off the North East coast of Java at St. 5 (7° 46′ S., 114° 30′.5 E., depth 330 metres).

S. sibogae is closely allied to *Solamen rex* Iredale[2] from the Twofoid Bay, Australia and probably to *Arcoperna recens* Tate[3] from Port Esperance, Tasmania, but is distinguished by its shape and very regular radial sculpture.

Family Isognomoniidae.

Genus **Isognomon** Solander.

1758. *Ostrea* (ex parte), Linnaeus, Syst. Nat., (ed. X), p. 699.
1786. *Isognomon* Solander, Portland Mus. Catalogue, p. 41.
1788. *Melina* Retzius, Dissert. Hist. Nat. Test., p. 22.
1798. *Isogonum* Röding, Mus. Boltenianum, p. 168.
1799. *Perna* Lamarck, Mém. Soc. d'Hist. Nat. Paris, p. 82.
1811. *Sutura* Megerle, Mag. Ges. Naturf. Fr. Berlin, V (1), p. 65.
1817. *Melina* Schumacher, Essai Nouv. Syst., p. 111.
1847. *Melina* Gray, Proc. Zool. Soc. London, p. 200.
1857. *Isognomon* Adams, H. & A., Gen. Rec. Moll., II, p. 526.
1858. *Perna* Reeve, Conch. Icon., XI, *Perna*, pl. I (explanation).
1886. *Perna* Fischer, P., Man. Conchyliol., p. 956.
1890. *Perna* Clessin in Martini Chemn. Conch.-Cab. (N. F.), VIII (I), *Malleacea*, p. 26.
1898. *Melina* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 665.
1915. *Isognomon* Iredale, Proc. Malacol. Soc. London, XI, p. 303.
1924. *Pedalion* Iredale, Proc. Linn. Soc. N. S. Wales, XLIX, p. 190.
1925. *Pedalion* (Sect. *Isogonum*) Oostingh, Geol. Comm. Agr. Univ. Wageningen, N° 9, p. 244.

As Iredale pointed out (1915) *Isognomon* Solander must replace *Melina* Retzius, but there seems no justification for his later suggestion that *Pedalion* (Solander) Huddersford should replace *Isognomon*.

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[1] Conrad, T. A. — Amer. Journ. Conch. I, p. 140 (1865); See also Tate, R., Proc. Malacol. Soc. London, II, p. 181 (1897).

[2] Iredale, T. — Proc. Linn. Soc. N. S. Wales, XLIX, p. 198, pl. XXXIII, fig. 15, pl. XXXV, fig. 2 (1924).

[3] Tate, R. — Proc. Malacol. Soc. London, II, p. 182, textfigure (1897).

Good descriptions of the genus are to be found in the works of Reeve, Fischer and Clessin. The genotype as selected by Iredale is *Isognomon isogonum* 1) (Linn.).

1. *Isognomon isognomum* (Linn.).

1741. *Winkelhaak* Rumphius, Amboin. Rarit., p. 158, pl. XLVII, fig. 1.
1753. *Isognomon Nigricans ex fusco* Klein, Tentamen Méth. Ostracol., p. 121, pl. VIII, fig. 15.
1758. *Concha Volsella dicta* Seba, Thes., III, p. 181, pl. XCI, figs. 6, 7.
1758. *Ostrea Isognomum* Linnaeus, Syst. Nat., (ed. X), p. 699.
1764. *Ostrea Isognomon* (ex parte), Linnaeus, Mus. Lud. Ulric, p. 533.
1767. *Ostrea Isogonum* (ex parte), Linnaeus, Syst. Nat., (ed. XII), p. 1149.
1767. *Isognomon* Petiver, Anim. Amboin., p. 4, pl. XX, fig. 11.
1780. *Huitre* Favanne, Conch., pl. XLIII, figs. B1, B1.
1784. *Norma Gnomon sp. Isognomoni perfecti* Chemnitz, Conch.-Cab., VII, p. 257, pl. LIX, fig. 584.
1788. *Melina Isogonum* Retzius, Nov. Test. Gen., p. 23.
1788. *Ostrea Isogonum* Barbut, Gen. Verm., p. 56, pl. IX, fig. 4.
1791. *Ostrea Isognomum* Gmelin, Syst. Nat., (ed. XIII), p. 3338.
1791. Bruguière, Encyclopéd. Méthod., pl. CLXXVI, fig. 1.
1798. *Isogonum Gnomon* (ex parte), Röding, Mus. Boltenianum, p. 168.
1802. *Perna isogona* Bosc, Hist. Nat. Coq., II, p. 283, pl. XII, fig. 3.
1817. *Pedalion Isognomon* Dillwyn, Descr. Cat., I., p. 822.
1819. *Perna Isognomum* Lamarck, Anim. sans Vertèb., VI, p. 140.
1819. *Perna femoralis* var. *b.*, Lamarck, op. cit., p. 140.
1824. *Perna Isogonum* Blainville, Dict. Sci. Nat., XXXII, p. 314, pl. XC, fig. 1.
1830. *Perna femorale* var. *B*, Blainville, Man. Malacol., pl. LXIII, fig. 1.
1850. *Perna isognomum* Deshayes in Cuvier, Règne Anim., pl. LXXXI, figs. 1, 1*a*.
1855. *Ostrea Isognomum* Hanley, Ipsa Linn. Conch., p. 118.
1855. *Perna Isognomon* Berge, Conchylienbuch, p. 88, pl. XXII, fig. 4.
1862. *Perna isognomon* Bronn, Thierreich, Klass. Ord. Weichth., III, Atlas I, pl. XLI, fig. 10.
1886. *Perna* (*Isognomon*) *isogonum* Fischer, P., Man. Conchyliol., p. 956.
1887. *Perna isognomon* von Martens, Journ. Linn. Soc. London, (Zool.), XXI, p. 203.
1890—91. *Perna isogonum* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (I), *Malleacea*, pp. 27, 41, pl. VIII, fig. 1, pl. XV, fig. 2, pl. XV *c*, fig. 1.
1898. ? *Perna isognomon* Melvill & Standen, Journ. Conch., IX, p. 81.
1909. *Perna isognomon* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 147.
1909. *Melina isognomum* Lamy, Bull. Mus. d'Hist. Nat., Paris, XV, p. 468.
1911. *Isognomum* (*Perna*) *isognomum* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 26, pl. VII, figs. 6, 7.
1919. *Perna isognomon* Odhner, Arkiv Zool., XII, N° 6, p. 5.
1925. *Pedalion* (*Isogonum*) *isognomum* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N° 9, p. 244.
1928. *Pedalion isognomum* Faustino, Summary Philippine Mar. Freshw. Mollusks, p. 25.
1929. *Isognomon isogonum* Dautzenberg, Faun. Colon. Francais., III, p. 566.

As a result of careless citations of the figures of the earlier authors a great deal of confusion was introduced in reference to the form named *Ostrea isognomum* by Linnaeus. In "Systema Naturae" (ed. X), he cited Rumphius pl. XLVII, fig. 1 and Klein pl. VIII, fig. 15 for figures of his species. Both these figures represent a form with a relatively narrow, elongate and somewhat arched shell and provided with a comparatively long and narrow auricle. In

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1) Iredale wrongly spells the specific name as *isognomon* but the correct Linnean spelling is *isognomum*.

"Mus. Lud. Uricae" he added a reference to SEBA, pl. XCIII, figs. 1, 2, both of which are figures of a species of *Malleus*. In the twelfth edition of the "Systema" he replaced this last citation by SEBA, pl. XCI, figs. 6, 7, 8; the first two figures agree with the figure of RUMPHIUS, but figure 8 represents a form with a short auricle, and with its byssal gape more insinuated below the anterior extremity of the hinge; this form was described later as *canina* by LAMARCK. In the same work he also cited GUALTIERI, pl. XCVII, fig. 7, which is the figure of a form with a very long, somewhat straight shell, and a very short auricle; this form was later named *norma* by RÖDING and *femoralis* by LAMARCK.

Distribution: — *I. isognomum* is widely distributed in the Indo-Pacific.

In the "Siboga" collection this species is represented by shells collected at Tual (St. 258), Saleyer Anchorage (St. 213) and Anchorage off Kilsuin, west coast of Kur Island (St. 250).

2. *Isognomon isognomum* (Linn.) var. *canina* (Lamarck).

1758. *Concha Volsella dicta minor* etc., Seba, Thes., p. 181, pl. XCI, fig. 8.
1773. *L'Equerre* Knorr, Delices des Yeux, VI, p. 23. pl. XIII, fig. 1.
1773. *Der Winkelhaken* Valentyn, Abhandl. Schneck. Muschel. p. 145, pl. XIII, fig. 3.
1817. *Melina Isogonum* Schumacher, Essai Nouv. Syst., p. 111, pl. II, figs. 4*a, b*.
1819. *Perna canina* Lamarck, Anim. sans Vertèb., VI, p. 141.
1825. *Ostrea Isognomon* Wood, Ind. Test., p. 53, pl. XI, fig. 79.
1830. *Perna Isognomum* Sowerby, Gen. Shells, II, fig. 1.
1841. *Perna Isognomum* Reeve, Conch. Syst., p. 147, pl. CVI, fig. 1.
1843. *Perna Canina* Hanley, Rec. Biv. Shells, p. 258.
1845. *Perna canina* Catlow & Reeve, Conch. Nomencl., p. 77.
1853. *Perna isognomum* Deshayes, Trait. Elem. Conch., pl. XLV, figs. 1, 2.
1856. *Ostrea isognomon* Hanley in Wood, Ind. Test., p. 63, pl. XI, fig. 79.
1858. *Perna fimbriata*, *P. patibulum* and *P. vespertilio* Reeve, Conch. Icon., XI, *Perna* pl. IV, figs. 18, 19, pl. VI, fig. 26.
1880. *Perna isognomon* var. *canina* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 317.
1891. *Perna novohollandiae*, *P. patibulum*, *P. vespertilio*, *P. fimbriata* and ? *P. aquila* Clessin in Martini Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 34, pl. X, fig. 2, p. 34, pl. VIII, fig. 2, p. 37, pl. XIII, fig. 2, p. 38, pl. XIII, fig, 4, p. 43, pl. XV*a*, fig. 1.
1896. *Perna vespertilio* Casto de Elera, Cat. Sist. Filip., p. 798.
1909. *Melina isognomum* var. *canina* Lamy. Mém. Soc. Zool. France, XXII, p. 339.
1928. *Pedalion vespertilio* Faustino, Summary Philippine Mar. Freshw. Mollusks, p. 25.
1929. *Isognomon isognomum* var. *canina* Dautzenberg, Faun. Col. Français., III, p. 566.

The synonymy given above is based on a careful study of the literature and the collections in the British Museum (Nat. Hist.) London, and the "Siboga" collection.

The var. *canina* of *I. isognomum* has a comparatively broader, rather elongate, straight or only slightly arched shell. The auricle is short and broad, somewhat triangular in outline, and the byssal gape is more insinuated below the hinge-margin.

Distribution: — *I. isognomum* var. *canina* has been recorded from such widely separated areas as the Mascarenes in the Indian Ocean, and the Philippines in the Pacific. Probably it is found throughout the Indo-Pacific Region.

In the "Siboga" collection there is a good series of this interesting variety from Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago (St. 93), St. 164 (1°42'.5 S., 130°47'.5 E., 32 metres), Saleyer Anchorage (St. 213), near Lucipara Island (St. 225), Anchorage off Kilsuin, west coast of Kur Island (St. 250) and Tual Anchorage, Kei Islands (St. 258).

3. *Isognomon isognomum* (Linn.) var. *norma* (Röding).

1742. *Concha longa brachiata* etc. Gualtieri, Ind. Test., pl. XCVII, figs. A, A, A.
1770. *L'Equerre* Knorr, Delices des Yeux, IV, p. 19, pl. X, figs. 1, 2.
1784. *Species Isognomonis imperfecti* and *Species curvali et gibbosi Isognomonis* Chemnitz, Conch.-Cab., VII, pp. 253, 256, pl. LIX, figs. 582, 583.
1791. Bruguière, Encyclopéd. Méthod., pl. CLXXV, figures 4, 5.
1798. *Isognomon Norma* Röding, Mus. Boltenianum, p. 168.
1815. *Perna tranquebarensis* Leach, Zool. Miscell., II, p. 142, pl. CXIV.
1815. *Ostrea Isognomum* Burrow, Elem. Conch., p. 247, pl. IX, fig. 5.
1819. *Perna femoralis* Lamarck, Anim. sans Vertèb., VI, p. 140.
1825. *Perna femoralis* Blainville, Man. Malacol., p. 528, pl. LXIII, fig. 1.
1840. *Perna femoralis* Pfeiffer, Krit. Reg., p. 71.
1841. *Perna femoralis* Sganzin, Cat. Coq. Ile France, p. 10.
1845. *Perna tranquebarensis* Chenu, Leach Miscell. Zool., p. 17, pl. VIII, fig. 1.
1858. *Perna isognomum* Reeve, Conch. Icon., XI, *Perna*, pl. V, fig. 24.
1862. *Perna femoralis* Chenu, Man. Conchyliol., II, p. 161, fig. 802.
1879. *Perna isognomon* var. *femoralis* von Martens, Monatsber. K. Akad. Wiss. Berlin, p. 740.
1880. *Perna isognomon* var. *femoralis* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 317.
1890. *Perna isognomum* var. *femoralis* Paetel, Cat. Conch. Samm., III, p. 206.
1890—91. *Perna isogonum* and *P. obliqua* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, pp. 27, 41, 44, pl. VIII, fig. 1, pl. XV*a*, fig. 2, pl. XV*c*, fig. 1, pl. XV*b*, fig. 2.
1891. *Perna femoralis* Smith, Proc. Zool. Soc. London, p. 435.
1898. *Perna femoralis* Melvill & Standen, Journ. Conch., IX, p. 81.
1929. *Isognomon isognomum* var. *femoralis*, Dautzenberg, Faun. Colon. Français., III, p. 566.

This variety has a more elongate, straight or somewhat arched and even twisted, and a comparatively narrow shell; the auricles are very small and poorly developed; the hinge area is also comparatively narrower than in the typical form.

Distribution: — *I. isognomum* var. *norma* appears to be mainly restricted to the Indian Ocean, but the "Siboga" Expedition collected a typical shell of this variety at Saleyer Anchorage (St. 213).

4. *Isognomon attenuata* (Reeve).

1788. *Ostrea perna* Barbut (nec Linn.), Gen. Verm., p. 56, pl. IX, fig. 3.
1858. *Perna attenuata* Reeve, Conch. Icon., XI, *Perna*, pl. VI, fig. 25.
1860. *Perna attenuata* Reeve, Elem. Conch., II, p. 66.
1869. *Perna attenuata* Issel, Malacol. Mar. Rosso, p. 96.
1890. *Perna attenuata* Paetel, Cat. Conch. Samm., III, p. 206.
1891. *Perna attenuata* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 33, pl. XI, fig. 1.
1899. *Perna attenuata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 184.
1910. *Perna attenuata* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.

Isognomon attenuata appears to be a highly variable species. The shells are usually oblique and rather narrow, but others are broader and somewhat curved about the middle. The hinge-line is short and narrow. It is probably only a form of *I. isognomum*.

Distribution: — *I. attenuata* has been recorded from the Red Sea to the Australian waters.

In the "Siboga" Expedition collections there are 3 young shells from the Bay of Kankamaraän, S. coast of Kangeang (St. 16), Bay of Badjo, W. coast of Flores (St. 50) and the Anchorage between Nusa Besi and the N. E. Point of Timor (St. 282). The shell from St. 282 is very young and is doubtfully assigned to this species.

5. *Isognomon perna* (Linn.).

1685. *Pecten leviter cavus* etc. Lister, Hist. Conch., pl. CCXXVIII, fig. 63.
1753. *Ostreum laeve* Klein, Test. Meth. Ostra., p. 124, pl. VIII, fig. 20.
1767. *Ostrea Perna* Linnaeus, Syst. Nat., (ed. XII), p. 1149.
1786. *Ostrea Perna* Schröter, Einleit., III, p. 351, pl. IX, fig. 5.
1790. *Ostrea Perna* Gmelin, Syst. Nat., (ed. XIII), p. 3338.
1817. *Ostrea perna* Dillwyn, Descr. Cat., I, p. 281.
1819. *Perna sulcata* Lamarck, Anim. sans Vertèb., VI, p. 141.
1823. *Perna sulcata* Sowerby, Cat. Tankerville, p. 24.
1824. *Perna sulcata* Dubois, Epitome, p. 109.
1832. *Perna sulcata* Deshayes, Encyclopéd. Méthod., III, p. 737.
1836. *Perna sulcata* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 77.
1841. *Perna sulcata* Sganzin, Coq. Ile France, p. 10.
1843. *Perna Sulcata* Hanley, Rec. Biv. Shells, p. 258.
1845. *Perna sulcata* Catlow & Reeve, Conch. Nomencl., p. 77.
1850. *Perna sulcata* Deshayes in Cuvier, Règne Anim., pl. LXXXI, figs. 3, 3*a*.
1850. *Perna eremita* Gould, Proc. Boston Nat. Hist. Soc., III, p. 311.
1852. *Perna eremita* Gould, U. S. Expl. Exped., p. 446, pl. XL, figs. 557, *a—d*.
1855. *Ostrea perna* Hanley, Ipsa Linn. Conch., p. 117, pl. II, fig. 7.
1855. *Perna sulcata* Berge, Conchylienbuch, p. 88, pl. XII, fig. 3.
1857. *Isognomon perna* Adams, H. & A., Gen. Rec. Moll., II, p. 527.
1858. *Perna limoides* Reeve, Conch. Icon., XI, *Perna*, pl. IV, fig. 17.
1858. *Perna sulcata* Fischer, P., Journ. Conchyliol., VII, p. 340.
1860. *Ostrea Limoides* Reeve, Elem. Conch., II, p. 66.
1862. *Ostrea eremita* Gould, Otia Conch., p. 92.
1869. *Perna Linnaei* Dunker, Cat. Mus. Godeffroy, IV, p. 115.
1882. *Melina perna* Dunker, Ind. Moll. Mar. Japon., p. 230.
1887. *Perna costellata* von Martens (nec Conrad), Journ. Linn. Soc. London (Zool.), XXI, p. 204.
1890. *Perna eremita P. Limoides, P. perna* and *P. sulcata* Paetel, Cat. Conch. Samm., III, pp. 206, 207.
1891. *Perna limoides* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 39, pl. XIV, fig. 3.
1895. *Perna perna* Pilsbry, Cat. Mar. Moll. Japan, p. 147.
1900. *Melina perna* Smith, Proc. Zool. Soc. London, p. 118.
1903. *Melina perna* Smith, Fauna Geogr. Maldive, Laccadive Archipel., p. 623.
1906. *Perna perna* Owston, Japan. Loochooan Shells, p. 34.
1909. *Perna sulcata* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 125.
1910. *Perna perna* Smith, Ann. Natal Mus., II, p. 218.
1911. *Isognomum perna* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 26, pl. VII, figs. 3—8.
1929. *Isognomon perna* Dautzenberg, Faun. Colon. Francais., III, p. 567.

HANLEY noted that the type specimens of *Perna sulcata* Lamarck preserved in the Museum d'Hist. Nat. Paris are identical with the Linnean *Ostrea perna*.

I. perna is a very variable species. The young shells are thin, but full grown shells are moderately thick, ovate to orbicular in outline, and covered with a large number of slightly raised brownish ribs.

Distribution: — *I. perna* has a very wide range of distribution in the Indo-Pacific.

In the "Siboga" collections it is represented by a very fine series of shells from the Bay of Kankamaraän, S. coast of Kangeang (St. 16), Anchorage off Labuan Pandan, Lombok (St. 34), Sailus Ketjil, Paternoster Islands (St. 37), Bay of Badjo, West coast of Flores (St. 50), Anchorage off Seba, Savu (St. 58), East side of Pajunga Island, Kwandang Bay (St. 115), Taruna Bay, Great Sangir Island (St. 127), Anchorage off Kawio and Kamboling Islands (St. 129), Anchorage off Beo, Karakelang Islands (St. 131), Sanana Bay, East coast of Sula Besi (St. 193), Saleyer (St. 213) and (St. 225) near Lucipara Island.

6. *Isognomon anomioides* (Reeve).

1858. *Perna anomioides* Reeve, Conch. Icon., XI, *Perna*, pl. III, fig. 11.
1860. *Perna Anomioides* Reeve, Elem. Conch., II, p. 66.
1877. *Isognomon* (*Perna*) *anomioides* Pagenstecher, Zool. Ergebn. Reise Rothen Meer. Mollusk., p. 32.
1890. *Perna anomioides* Paetel, Cat. Conch. Samm., III, p. 206.
1891. *Perna anomioides* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 31, pl. X, fig. 1.
1897. *Perna anomioides* Sowerby, Mar. Shells S. Africa, Suppl., p. 27.
1903. *Perna Anomioides* Hidalgo, Cat. Filip., p. 368.
1911. *Melina anomioides* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVII, p. 130.
1928. *Pedalion anomioides* Faustino, Summary Philippine Mar. Freshw. Mollusks, p. 24.

The adult shell in this species is oblique, greatly elongated, somewhat tongue-shaped, but the young are more regular and almost circular in outline. The shell is thin and somewhat transluscent, of a yellowish white colour, with the nacreous layer of a shining pearly colour. The hinge-line is very short, and the umbonal area and the byssus gape are prominent.

Distribution: — REEVE gives the habitat of *I. anomioides* as "California", but on the type-tablet from the CUMING collection in the British Museum (Nat. Hist.), London, the locality is given as the Torres Straits. *I. anomioides* has also been recorded from the Philippines, Mauritius, S. Africa and the Red Sea, and appears to be widely distributed in the Indo-Pacific Region and the Red Sea.

The "Siboga" Expedition collected shells from the east side of Pajunga Island, Kwandang Bay (St. 115) and Anchorage South of Lucipara Group (St. 225^c).

7. *Isognomon marsupiale* (Röding).

1784. *Varietas Marsupii Hungarici equitis* Chemnitz, Conch.-Cab., VII, p. 249, pl. LVIII, fig. 577.
1798. *Isognomum marsupiale* Röding, Mus. Boltenianum, p. 168.
1819. *Perna marsupium* Lamarck, Anim. sans Vertèb., VI, p. 141.
1824. *Perna marsupium* Dubois, Epitome, p. 109.
1825. *Perna Marsupium* Sowerby, Cat. Tankerville, p. 23.
1842. *Perna marsupium* Sowerby, Conch. Man., p. 222, pl. IX, fig. 66.
1843. *Perna Marsupium* Hanley, Rec. Biv. Shells, p. 258.
1845. *Perna marsupium* Catlow & Reeve, Conch. Nomencl., p. 77.
1855. *Perna marsupium* Berge, Conchylienbuch, p. 88.
1857. *Isognomon marsupium* Adams, H. & A., Gen. Rec. Moll., II, p. 527.
1858. *Perna marsupium* Reeve, Conch. Icon., XI, *Perna*, pl. III, fig. 15.
1867. *Perna marsupium* Reeve, Elem. Conch., II, p. 66.

1890. *Perna marsupium* Paetel, Cat. Conch. Samm. III, p. 207.
1891. *Perna marsupium* Clessin in Martini-Chemn. Conch.-Cab. (N. F), VIII (I), *Malleacea*, p. 32, pl. X, fig. 4.
1928. *Pedalion marsupium* Faustino, Summary Philippine Mar. Freshw. Mollusks, p. 25.

The shell of *I. marsupiale* varies a great deal in outline, from subquadrate to orbicular or even elongated subovoidal. The shell is usually thick and solid, and on the surface the valves are concentrically but often somewhat irregularly laminated. The nacreous layer of the shells varies from dull pearl white to deep purple or violet.

Distribution: — *I. marsupiale* has so far been recorded from the Philippines.

In the "Siboga" collection the species is represented by a fair series of shells from the Bay of Labuan Tring, West coast of Lombok (St. 19), Anchorage off Kawio and Kamboling Islands, Karkaralong Group (St. 129), Sanana Bay, East coast of Sula Besi (St. 193), Ambon Anchorage (St. 231), Nalahia Bay, Nusa-Laut Island (St. 234) and Anchorage off Kilsuin, West coast of Kur Island (St. 250).

8. *Isognomon legumen* (Gmelin).

1784. *Siliqua spengleri* Chemnitz, Conch.-Cab., VII, p. 250, pl. LIX, fig. 578.
1788. *Siliqua spengleri* Schröter, Conch.-Cab. Namen Reg., p. 96.
1790. *Ostrea legumen* Gmelin, Syst. Nat., (ed. XIII), p. 3339.
1791. *Perna dactylus* Valenciennes, Encyclopéd. Méthod., pl. CLXXV, figs. 2, 3.
1802. *Ostrea legumen* Bosc, Hist. Nat. Coq., II, p. 283.
1817. *Ostrea legumen* Dillwyn, Descr. Cat., I, p. 283.
1819. *Perna legumen* Lamarck, Anim. sans Vertèb.., VI, p. 142.
1825. *Ostrea Legumen* Wood, Ind. Test., p. 53, pl. XI, fig. 83.
1836. *Perna legumen* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 78.
1843. *Perna Legumen* Hanley, Rec. Biv. Shells, p. 259.
1845. *Perna legumen* Catlow & Reeve, Conch. Nomencl., p. 77.
1856. *Ostrea legumen* Hanley in Wood, Ind. Test., p. 63, pl. XI, fig. 83.
1857. *Isognomon legumen* Adams, H. & A., Gen. Rec. Moll., II, p. 527.
1858. *Perna caudata, P. linguaeformis, P. laticostata* and *P. legumen* Reeve, Conch. Icon., XI, *Perna*, pl. I, fig. 5, pl. II, figs. 7, 9 and pl. V, fig. 22.
1860. *Isognomon* (*Perna*) *caudata* (ex parte), Cooke, Ann. Mag. Nat. Hist., (5) XVII, p. 138.
1887. *Perna legumen* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 204.
1888. *Perna legumen* Jousseaume, Mém. Soc. Zool. France, I, p. 219.
1890. *Perna legumen, P. caudata, P. latecostata* (sic) and *P. linguaeformis* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 28, pl. IX, fig. 3; p. 30, pl. IX, fig. 4; p. 36, pl. XIII, fig. 4; p. 40.
1909. *Perna spengleri* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 146.

As remarked by Lynge there can be no doubt that Gmelin's species *I. legumen* is synonymous with the species figured by Chemnitz as *Siliqua spengleri*. Further as Cooke stated, the Reevian species *caudata*, *linguaeformis* and *laticostata* are all based on slightly different shells of this very variable species.

Distribution: — *I. legumen* is widely distributed from the Red Sea to the Pacific Ocean.

The "Siboga" Expedition collected specimens from the Anchorage off Kawio and Kamboling Islands, Karkaralong Group (St. 129), Anchorage off Laiwui, Coast of Obi Major (St. 142), Sounding due West, 1300 M. distant from the North point of Kabia Island Reef (St. 215), Ambon Anchorage (St. 231) and Kulewatti (Sollot) Bay, Dammer Island (St. 277).

Family Vulsellidae.

Genus **Vulsella** Röding.

1798. *Vulsella* Röding, Mus. Boltenianum, p. 156.
1799. *Vulsella* Lamarck, Mém. Soc. d'Hist. Nat. Paris, p. 82.
1840. *Reniella* Swainson, Treat. Malacol., p. 386.
1847. *Baphia* Gray, Proc. Zool. Soc. London, p. 199.
1857. *Vulsella* Adams, H. & A., Gen. Rec. Moll., p. 523 (as a genus of Humphrey).
1858. *Vulsella* Reeve, Conch. Icon., XI, *Vulsella* pl. 1 (explanation).
1886. *Vulsella* Fischer, P., Man. Conchyliol., p. 955.
1886. *Vulsella* Cooke, Ann. Mag. Nat. Hist., (5) XVII, pp. 59—67.
1890. *Vulsella* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 16.
1911. *Vulsella* Smith, Proc. Malacol. Soc. London, pp. 306—312, pl. XI.

The genus *Vulsella* has been ascribed to Lamarck by several authors, but Lamarck's usage of this name was anticipated by Röding a year earlier. Iredale [1]) has proposed to reject the name *Vulsella* in view of its having been used "in a different sense" by Humphrey in the "Museum Calonnianum", but in view of the decision of the International Commission of Zoological Nomenclature [2]) Humphrey's names in the work under question do not effect the status of any genera proposed by other workers.

Good definitions of the genus were published by Fischer and Clessin. The type species of the genus is *Vulsella major* Röding = *Vulsella vulsella* (Linn.).

1. *Vulsella vulsella* (Linn.).

1758. *Mya vulsella* Linnaeus, Syst. Nat. (ed. X), p. 671.
1767. *Mya vulsella* Linnaeus, Syst. Nat. (ed. XII), p. 1113.
1790. *Mya vulsella* Gmelin, Syst. Nat. (ed. XIII). VI, p. 3219.
1798. *Vulsella major* Röding, Mus. Boltenianum, p. 156.
1819. *Vulsella lingulata*, *V. hians* and *V. mytilina* Lamarck, Anim. sans Vertèb., VI, pp. 221, 268.
1827. Bruguière, Encyclopéd. Méthod., pl. CLXXVIII, fig. 4.
1836. *Vulsella lingulata*, *V. hians* and *V. mytilina* Deshayes in Lamarck, Anim. sans Vertèb. VII, p. 267, 268.
1857. *Vulsella lingulata* and *V. mytilina* Adams, H. & A., Gen. Rec. Moll., II, p. 524, pl. CXXII, figs. 4, 4*a*.
1858. *Vulsella lingulata*, *V. mytilina* and *V. trita* Reeve, Conch. Icon., XI, *Vulsella*, pl. I, figs. 6, 4, pl. II, fig. 17.
1875. *Vulsella lingulata* Dunker, Jahrb. Deutsch. Malakozool. Ges., II, p. 2.
1880. *Valsella* (sic) *lingulata* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 317.
1884. *Vulsella vulsella* de Gregorio, Bull. Soc. Malacol. Ital., X, p. 66, pl. V, figs. 1—1*c*.
1885. *Vulsella mytilina* and *V. lingulata* Cooke, Ann. Mag. Nat. Hist., (5) XVII, p. 62.
1890. *Vulsella lingulata*, *V. mytilina* and *V. trita* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (3), *Malleacea*, pp. 17, 22, 25, pl. V, fig. 4, pl. VI, fig. 6, pl. VII, fig. 7.
1904. *Vulsella lingulata* Hidalgo, Cat. Filip., p. 368.
1911. *Vulsella vulsella* Smith, Proc. Malacol. Soc. London, V, p. 307, pl. XI, figs. 1—3.
1912. *Vulsella vulsella* Verco, Trans. Roy. Soc. S. Australia, XXXVI, p. 205.
1916. *Vulsella vulsella* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 156.

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1) Iredale, T. — Proc. Linn. Soc. N. S. Wales, XLIX, p. 191 (1924).
2) Zoological Nomenclature Opinion N⁰ 51.

1918. *Vulsella vulsella* Hedley, Journ. Roy. Soc. N. S. Wales, LI, Suppl., M 7.
1927. *Vulsella vulsella* Tomlin, Trans. Linn. Soc. London (Zool.), XXII, p. 302.
1928. *Vulsella lingulata* Faustino, Summary Philippine Marine Freshw. Moll., p. 28.
1929. *Vulsella vulsella* Dautzenberg, Faun. Colon. Francais., III, p. 565.
1930. *Vulsella vulsella* Thiele, Faun. Südwest. Austral., V, p. 590.

In the paper cited, SMITH has dealt with the question of the synonymy of *V. vulsella* in detail, while for accounts of the anatomy of this species reference may be made to the works of VAILLANT [1]), MENEGAUX [2]) and PELSENEER [3]).

The single shell in the "Siboga" collection which I assign to this species, agrees with specimens from the Red Sea and other localities in the British Museum (Nat. Hist.), London. It is a young shell 32 mm. long and is of a livid colour with traces of vertical brown stripes.

Distribution: — *V. vulsella* is widely distributed in the Indo-Pacific and is also known from the Red Sea.

The single shell in the "Siboga" collection was collected near Macassar (St. 71).

2. *Vulsella minor* Röding. (Plate II, figs. 46—49).

1782. *Der Kleine Bartkneiper* Chemnitz, Conch.-Cab., VI, p. 23, pl. II, figs. 8, 9.
1798. *Vulsella minor* Röding, Mus. Boltenianum, p. 156.
1857. *Vulsella minor* and *V. spongiarum* Adams, H. & A., Gen. Rec. Moll., II, p. 524.
1858. *Vulsella pholadiformis*, *V. attenuata* and *V. spongiarum* (Reeve non Lamarck), Reeve, Conch. Icon., XI, *Vulsella*, pl. I, fig. 1, fig. 5, pl. II, fig. 15.
1884. *Vulsella ililima* de Gregario, Bull. Soc. Malacol. Ital., X, p. 69, pl. V, fig. 5.
1885. *Vulsella Assabensis* de Gregario, Bull. Soc. Malacol. Ital., XI, p. 121.
1886. *Vulsella pholadiformis* and *V. attenuata* Cooke, Ann. Mag. Nat. Hist., (5) XVII, pp. 61, 62.
1890. *Vulsella attenuata*, *V. spongiarum* and *V. pholadiformis* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (3), *Malleacea*, pp. 20, 24, pl. V, figs. 1, 2, 3, pl. VII, fig. 8.
1910. *Vulsella vulsella* Smith (nec Linn.), Ann. Natal Mus., II, p. 213.
1911. *Vulsella attenuata* Smith, Proc. Malacol. Soc. London, V, p. 309.
1919. *Vulsella attenuata* Odhner, Arkiv. Zool., XII, n⁰. 6, p. 4.
1929. *Vulsella attenuata* Dautzenberg, Faun. Colon. Francais., III, p. 565.

From an examination of the collections before me I have no doubt that the Chemnitzian shells from the Red Sea figured in the *Conch-Cab.* and on which RÖDING's species was based, are specifically identical with what was described later by REEVE under the name *V. attenuata*. I am also of opinion that *V. pholadiformis* of REEVE is, as was suggested by SMITH, based on an abnormal young shell of this species.

Distribution: — *V. minor* has so far been recorded from Suez, the Red Sea, Natal and Madagascar.

In the "Siboga" collection it is represented by young specimens collected in the Bay of Labuan Tring, west coast of Lombok (St. 19), Bay of Badjo, west coast of Flores (St. 50), Anchorage off Sawan, Siau Island (St. 125), Anchorage off Lirung, Salibabu Island (St. 133) and Buka or Cyrus Bay (St. 299).

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[1]) VAILLANT, L. — L'Institut, p. 265 (1865), Compt. Rend. Acad. Sci. Paris, LXVI, pp. 1122—1125 (1868) and Ann. Sc. Nat. (Zool.), IX, p. 281—310, pl. XII (1868).

[2]) MENEGAUX, A. — Réch. Circulation Lamellibranch., pp. 44—48, figs. 8—11 (1890).

[3]) PELSENEER, P. — "Siboga" Lamellibranches (Anat.), pp. 26—27 (1911).

3. *Vulsella spongiarum* Lamarck.

1819. *Vulsella spongiarum* Lamarck, Anim. sans Vertèb., VI, p. 222.
1832. *Vulsella spongiarum* Deshayes, Encyclopéd. Méthod., III, p. 1149.
1836. *Vulsella spongiarum* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 268.
1858. *Vulsella Tasmanica*, *V. limaeformis*, *V. rudis* and *V. lingua-felis* (ex parte) Reeve, Conch. Icon., XI, *Vulsella*, pl. 1, fig. 3; pl. 2, figs. 10*a*, *b*, 12, 13*b*.
1875. ? *Vulsella minor* Dunker, Jahrb. Deutsch. Malakozool. Ges., II, p. 2.
1880. *Valsella* (sic) *spongiarum* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 317.
1886. *Vulsella spongiarum* (ex parte) Cooke, Ann. Mag. Nat. Hist., (5) XVII, p. 65.
1890. *Vulsella tasmanica* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (3), *Malleacea*, p. 24, pl. VII, fig. 4.
1901. *Vulsella ovata* Tate & May, Proc. Linn. Soc. N. S. Wales, XXVI, p. 440.
1911. *Vulsella spongiarum* Smith, Proc. Malacol. Soc. London, IX, p. 311, pl. XI, fig. 4.

As Smith has shown, Cooke was certainly wrong in including in the synonymy of *V. spongiarum* the species *V. pholadiformis*, *V. isocardia*, *V. crenulata*, *V. trita*, *V. dilatata* and *V. hügeli*. The synonymy of the species given above is mainly drawn up from Smith, but I have satisfied myself about its correctness.

Distribution: — *V. spongiarum* has been recorded from the Australian and Tasmanian waters and from the Seychelles.

A complete shell was dredged by the "Siboga" Expedition at St. 164 (1° 42′.5 S., 130° 47′.5 E., 32 metres) and a single valve in the Bay of Bima (St. 47).

Family Pteriidae.

Genus **Pteria** Scopoli.

1777. *Pteria* Scopoli, Intro. Hist. Nat., p. 397.
1798. *Pinctada* (ex parte) Röding, Mus. Boltenianum, p. 167.
1847. *Pteria* Gray, Proc. Zool. Soc. London, p. 199.
1857. *Avicula* Adams, H. & A., Gen. Rec. Moll., II, p. 524.
1886. *Avicula* Fischer, P., Man. Conchyliol., p. 951.
1895. *Pteria* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 668.
1925. *Pteria* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 58.

For a good description of *Pteria* Scopoli reference may be made to Woodring's paper cited above. The genotype is *Pteria hirundo* (Linn.).

In the "Siboga" collection I have not been able to refer 3 forms to previously described species; these are described in the present work under the names *P. tomlini*, *P. triangularis* and *P. sibogae*. Some shells are very young and, therefore, unidentifiable, while two badly broken shells from Bay of Bima (St. 47) appear to be young specimens of *Pteria heteroptera* (Lam.)[1].

1. *Pteria coturnix* (Dunker).

1879. *Avicula coturnix* Dunker in Martini Chemn. Conch.-Cab. (N. F.), VII (3), *Avicula*, p. 67, pl. XXIII, figs. 4, 5.
1882. *Avicula coturnix* Dunker, Ind. Moll. Mar. Japon., p. 228, pl. X, figs. 1, 2.

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[1] See Reeve, L. — Conch. Icon., X, *Avicula*, pl. XVI, fig. 67 (1857).

1890. *Avicula coturnix* Paetel, Cat. Conch. Samm., III, p. 202.
1895. *Pteria coturnix* Pilsbry, Cat. Mar. Moll. Japan, p. 146.
1911. *Avicula coturnix* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 24, pl. VIII, fig. 6.

Pteria coturnix is a small species with a thin, somewhat oblique and inequivalve shell. From allied species it is easily distinguished by its umbonal area, which projects markedly in front of the hinge-line. The shells vary greatly as to their colour and outline.

Distribution: — The species had hitherto been recorded from the seas of Japan only.

In the "Siboga" collection it is represented by a number of shells from St. 95 (5° 43′.5 N., 119° 40′ E.; 522 metres), Anchorage off North Ubian (St. 99, 6° 7′.5 N., 120° 26′ E.), St. 164 (1° 42′.5 S., 130° 47′.5 E.), Tual Anchorage, Kei Islands (St. 258) and mid-channel in Solor-strait off Kampong Menanga (St. 305).

2. *Pteria zebra* (Reeve).

1857. *Avicula zebra* Reeve, Conch. Icon., X, *Avicula*, pl. XI, fig. 36.
1860. *Avicula zebra* Reeve, Elem. Conch., II, p. 64.
1879. *Avicula zebra* Dunker in Martini Chemn. Conch.-Cab. (N. F.), VII, (3), *Avicula*, p. 60, pl. XXI, fig. 3.
1884. *Avicula zebra* Smith, Rept. Voy. "Alert", p. 113.
1890. *Avicula zebra* Paetel, Cat. Conch. Samm., III, p. 204.
1897. *Avicula zebra* Sowerby, Mar. Shells S. Africa, Suppl., p. 27.
1901. *Pteria zebra* Tate and May, Proc. Linn. Soc. N. S. Wales, XXVI, p. 439.
1903. *Electroma zebra* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 623.
1905. *Avicula zebra* Hidalgo, Cat. Filip., p. 367.
1906. *Avicula zebra* Standen and Leicester, Ceylon Pearl Oyster Rept., V, p. 289.
1909. *Pteria zebra* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 142, pl. II, figs. 16—18.
1910. *Pteria zebra* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Avicula zebra* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 24.
1917. *Pteria* (*Electroma*) *zebra* Odhner, Kungl. Sv. Akad. Handl., LII (N°. 16), p. 16, pl. I, fig. 6—8.

Distribution: — This species has a wide range of distribution in the Indo-Pacific; it has been recorded from the Maldives, the Gulf of Manaar, the Gulf of Siam, Port Elizabeth, Pearl Banks of Cape Jaubert, Queensland and Tasmania.

In the "Siboga" collection it is represented by two young valves taken at Anchorage South coast of Timor (St. 285, 8° 39′.1 S., 127° 4′.4 E.). Both the shells show narrow brown lines on a whitish gray background similar in pattern to the specimen from *Lytocarpus* figured by ODHNER (loc. cit., fig. 6).

3. *Pterea lata* (Gray).

1845. *Avicula lata* Gray in Eyre, Discoveries in Central Australia, I, p. 435, pl. VI, fig. 1.
1849. *Avicula serrulata* Dunker, Zeitschr. Malakozool., V, p. 178.
1857. *Avicula lata* Reeve, Conch. Icon., X, *Avicula*, pl. IV, fig. 5 (mss. sp. of Gray).
1857. *Avicula serrulata* Adams, H. & A., Gen. Rec. Shells, II, p. 525.
1860. *Avicula lata* Reeve, Elem. Conch., II, p. 64, pl. XXVIII, fig. 165.
1872. *Avicula serrulata* Dunker in Martini Chemn. Conch.-Cab. (N. F.), VII (3), *Avicula*, p. 18, pl. V, figs. 1, 2.
1884. *Avicula lata* Smith, Rept. Voy. "Alert", p. 112.
1890. *Avicula serrulata* Paetel, Cat. Conch. Samm., III, p. 204.

1909. *Pteria serrulata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr., Nat-Math., (7) V, p. 141.
1910. *Pteria lata* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Avicula serrulata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 24, pl. IX, fig. 5.
1917. *Pteria lata* Hedley, Journ. Roy. Soc. N. S. Wales, LI, Supplement, p. M 7.

As Smith, in his report on the "Alert" Mollusca, pointed out, this species was described and figured by Gray in 1845, and, therefore, Gray's name has priority over Dunker's *serrulata*. The specimens from the "Siboga" collection, which I refer to this species are all young shells, but they show the characteristic form of the auricles of *P. lata*, and agree in general with this species. Probably Reeve's *Avicula reticulata* (loc. cit., pl. XVIII, fig. 71) from Australia is also to be referred to this species.

Distribution: — *P. lata* is known from the Torres Straits, Port Essington, Moluccos and the Gulf of Siam.

In the "Siboga" collection there are three young shells collected from the Pearl Banks near the Anchorage off Pulu Jedan, East coast of Aru Islands (St. 273).

4. *Pteria chinensis* (Leach).

1741. *Avicula* Rumph, Amboin. Rarit., p. 152, pl. XLVI, fig. G.
1753. *Avicula longicauda* Klein, Tent. Méth. Ostrac., p. 121, pl. VIII, fig. 13.
1795. ? *Mytilus Avicula crocea* Chemnitz, Conch.-Cab. XI, p. 255, pl. CCV, figs. 2025, 2026.
1814. *Avicula chinensis* Leach, Zool. Miscell., I, p. 86, pl. XXXVIII, fig. 1.
1816. *Avicula chinensis* Blainville, Dict. Sci. Nat., III, Suppl. p. 139.
1817. *Avicula hirundo* var. *D.*, Dillwyn, Descr. Cat., I, p. 321.
1819. *Avicula crocea* Lamarck, Anim. sans Vertèb., VI, p. 148.
1825. *Avicula crocea* Sowerby, Cat. Tankerville, p. 24.
1830. *Avicula crocea* Deshayes, Encyclopéd. Méthod., II, p. 100.
1835. *Avicula crocea* Deshayes, in Lamarck, Anim. sans Vertèb., VII, p. 99.
1843. *Avicula crocea* Hanley, Rec. Biv. Shells, p. 261.
1844. *Avicula crocea* Potiez & Michaud, Gal. Douai, II, p. 105.
1845. *Avicula crocea* Catlow & Reeve, Conch. Nomencl., p. 78.
1855. *Avicula crocea* Berge, Conchylienbuch, p. 86, pl. XI, figs. 5, 6.
1857. *Avicula iridescens* and *A. trochilus* Reeve, Conch. Icon., X, *Avicula*, pl. XIII, fig. 48; pl. XIV, fig. 51.
1857. *Avicula crocea* Adams, H. & A., Gen. Rec. Moll., II, p. 525.
1860. *Avicula crocea* and *A. iridescens* Reeve, Elem. Conch., II, p. 63.
1862. *Avicula crocea* Chenu, Man. Conch. II, p. 159, fig. 786.
1872. *Avicula crocea* and *A. iridescens* Dunker in Martini Chemn. Conch-Cab. (N. F.), VII (3), *Avicula*, p. 35, pl. XI, figs. 1, 2—4; p. 37, pl. XI, fig. 5.
1880. *Avicula crocea* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 316.
1884. *Avicula crocea* Tryon, Struct. Syst. Conch., III, p. 270. Pl. CXXXI, fig. 62.
1890. *Avicula crocea* Paetel, Cat. Conch. Samm., III, p. 202.
1899. *Avicula crocea* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 183.
1905. *Avicula crocea* Hidalgo, Cat. Filip., p. 366.
1906. *Avicula iridescens* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 289.
1909. *Pteria crocea* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 124.
1910. *Pteria crocea* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Avicula chinensis* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 24.

As the synonymy given above shows, the Chemnitzian species *crocea* was described by Leach under the name *Avicula chinensis*. It is quite distinct from the species figured and described by Reeve under this name in Conch. Icon. (pl. XV, fig. 57), but of his species

A. iridescens and *A. trochilus* appear to be synonymous with LEACH's species. Most of the records of *Avicula crocea* from the Indian Ocean are, in my opinion, to be referred to LEACH's *P. chinensis*.

The shell of *P. chinensis* is very obliquely triangular, somewhat convex, broadly sinuated posteriorly, with a sculpture consisting of minute wavy striae in the young, but becoming less prominent in full-grown shells. The colour of the shells varies from orange-red to dark brown or with only brownish rays on an orange background. The posterior wing is not so well marked in the younger shells.

Distribution: — *P. chinensis* appears to be widely distributed in the Indo-Pacific area.

The "Siboga" Expedition collected shells, mostly half grown, from the Bay of Badjo, west of Flores (St. 50), Lamakera, Solor Island (St. 61), Macassar and surroundings (St. 71), St. 97 (5° 48′.7 N., 119° 49′.6 E.), Anchorage off North Ubian (St. 99), St. 164 (1° 42′.5 S., 130° 47′.5 E.; 32 metres), Banda Anchorage (St. 240), Anchorage off Pulu Jedan, east coast of Aru Islands (St. 273), Buka or Cyrus Bay (St. 299) and St. 310 (8° 30′ S., 119° 7′.5 E.; 73 metres).

5. *Pteria penguin* (Röding).

1742. *Concha Aliformis* etc. Gualtieri, Index Test., pl. XCIV, figs. A, A, A.
1773. Knorr, Vergnüg. d. Augen etc., VI, pl. II, fig. 1.
1785. *Labrum, seu lavacrum cupreum* Chemnitz, Conch.-Cab., VIII, p. 145, pl. LXXXI, fig. 728.
1790. *Mytilus hirundo* var. δ Gmelin (non Linn.), Syst. Nat. (ed. XIII), p. 3357.
1798. *Pinctada penguin* Röding, Mus. Boltenianum, p. 167.
1819. *Avicula macroptera* and *A. lotorium* Lamarck, Anim. sans Vertèb., VI, p. 147.
1824. *Avicula macroptera* Blainville, Dict. Sci. Nat., XXXII, p. 317, pl. XC, fig. 3.
1825. *Avicula macroptera* Blainville, Man. Malacol., p. 531, pl. LXIII, fig. 3.
1825. *Avicula macroptera* Sowerby, Cat. Tankerville, p. 24.
1830. *Avicula macroptera* Deshayes, Encyclopéd. Méthod., II, p. 99.
1836. *Avicula macroptera* and *A. lotorium* Deshayes in Lamarck, Anim. sans Vertèb. VII, p. 97.
1840. *Avicula lotorium* Pfeiffer, Krit. Register, p. 76.
1843. *Avicula macroptera* Hanley, Rec. Biv. Shells, p. 261.
1844. *Avicula lotorium* Potiez & Michaud, Gal. Douai, II, p. 104.
1845. *Avicula macroptera* Catlow & Reeve, Conch. Nomencl., p. 78.
1852. *Avicula macroptera* and *A. lotorium* Chenu, Illustr. Conchyliol., pl. I, pl. II, figs. 5, *a*, *b*.
1855. *Avicula lotorium* and *A. macroptera* Berge, Conchylienbuch, pp. 86—87.
1857. *Avicula macroptera* and *A. lotorium* Reeve, Conch. Icon., X, *Avicula*, pl. III, figs. 2, 3.
1857. *Avicula macroptera* Adams, H. & A., Gen. Rec. Moll., II, p. 525.
1860. *Avicula macroptera* and *A. lotorium* Reeve, Elem. Conch., II, p. 63.
1862. *Avicula macroptera* Chenu, Man. Conchyliol., II, p. 159, fig. 790.
1869. *Avicula macroptera* Dunker, Cat. Mus. Godeffroy, IV, p. 115.
1872. *Avicula macroptera* Dunker in Martini-Chemn. Conch.-Cab. (N. F.). VII (3), *Avicula*, p. 22, pl. VII, p. 26, pl. VIII, fig. 5 (young), p. 55, pl. XIX, fig. 2.
1877. *Avicula macroptera* de Man, Rech. Faun. Madagascar, etc., pt. V, *Mollusques*, p. 9.
1878. *Avicula macroptera* Kobelt, Illustr. Conchylienbuch, p. 365, pl. CVII, fig. 3.
1884. *Avicula macroptera* and *A. lotorium* Grasset, Ind. Test. Viv., p. 303.
1885. *Avicula macroptera* Smith, "Challenger" Lamellibranchia., p. 284.
1890. *Avicula macroptera* Paetel, Cat. Conch. Samm., III, p. 203.
1891. *Avicula macroptera* Smith, Proc. Zool. Soc. London, p. 435.
1895. *Pteria macroptera* and var. *lotorium* Pilsbry, Cat. Mar. Moll. Japan, p. 146.
1901. *Avicula macroptera* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXIX, p. 288.
1905. *Avicula macroptera* and *A. lotorium* Hidalgo, Cat. Filip., p. 367.
1906. *Avicula macroptera* Melvill and Standen, Proc. Zool. Soc. London, p. 802.
1906. *Pteria macroptera* Owston, Japan. Loochooan Shells, p. 34.

1909. *Pteria macroptera* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 124.
1909. *Pteria macroptera* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 468.
1910. *Pteria macroptera* Hedley, Austr. Ass. Adv. Sci., XII, p. 344.
1911. *Avicula macroptera* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 24, pl. VIII, fig. 8.
1916. *Pteria macroptera* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 155.
1929. *Avicula lotorium* and *A. macroptera* Dautzenberg, Faune Colon. Francais., III, Fasc. IV, pp. 562, 563.
1930. *Pteria macroptera* Thiele, Faun. Südwest Austral., V, p. 590.

It is unfortunate that the Lamarckian name of this well known species has to be replaced to the earlier one of Röding, but there can be no doubt that the Lamarckian name is synonymous with the earlier one of Röding. I have also no doubt that Lamarck's second species *A. lotorium* is based on only slightly different shells of this wide-spread species.

Distribution: — *Pteria penguin* has been recorded from Australia to Madagascar.

The "Siboga" Expedition collected a number of shells of this species in the Bay of Badjo, west coast of Flores (St. 50).

6. *Pteria triangularis* sp. nov. (Plate III, figs. 1, 2).

The following is a description of this new species: — Shell small, fairly thick; almost triangular, oblique, inequivalve; surface of shell covered with low, concentric lines of growth except on the smooth umbonal area; moderately inflated, right valve slightly concave on the inner surface, left valve inflated, maximum inflation medial, rising from the umbonal and gradually narrowing down to posterior margin of shell; dorsal margin long, straight; umbo low, narrowly rising above dorsal margin; anterior auricle comparatively small, triangular, separated from the umbonal inflated area by a shallow diagonal groove; no posterior auricle; posterior margin almost straight; ventral margin slightly arched; cardinal area narrow, extending to about $^1/_8$ from posterior margin of shell. Colour of shell dusky brown; younger shells more yellowish; nacre steely blue.

Measurements (in millimetres).

	Holotype	Paratype
Length	21.5	14.4
Height	11.6	7.5
Maximum diameter . .	4.8	3.2

Habitat: — *P. triangularis* is represented by 2 complete shells collected at St. 166 (2° 28′.5 S., 131° 3′.3 E., 118 metres) and St. 310 (8° 30′ S., 119° 7′.5 E., 73 metres) respectively.

Remarks: — The peculiar shape and texture of this species distinguish it from previously described species.

7. *Pteria tomlini* sp. nov. (Plate III, figs. 3, 4).

The following is a description of this new species: — Shell small, thin; trapezoidal in outline; inequivalve; almost smooth; left valve greatly inflated along a diagonal area from the umbo to the posterior ventral margin, greatest inflation at about one third of the height from the anterior margin, descending gradually to the posterior but more abruptly to the anterior margin; right valve almost flat; dorsal margin long, almost straight, umbo prominent, moderately inflated, projecting above the dorsal margin; anterior auricle small, beak-like, somewhat recurved over the insinuated margin; no distinct posterior auricle; cardinal area narrow, long extending to about $^1/_3$ from the posterior margin; colour of shell shining white externally, with 16—18 thin wavy stripes of a brown colour running from the dorsal to the ventral margin almost parallel to one another, nacre bluish-green.

Measurements (in millimetres).

	Holotype	Paratype
Length	21	17.5
Height	11.4	11.2
Maximum diameter . .	5.6	5.4

Habitat: — Two shells of this very beautiful and highly fragile species were collected by the „Siboga" Expedition in Buka or Cyrus Bay, east coast of Rotti Island (St. 299).

Remarks: — This species, which I have associated with the name of my friend Mr. J. R. Le B. Tomlin, appears to be allied to *P. zebra* (Reeve), but is distinguished by its shape, texture and colouration.

8. *Pteria sibogae* sp. nov. (Plate VIII, figs. 11, 12).

The following is a description of this new species: — Shell small, thick, elongate ovate, oblique, posteriorly produced into a narrow wing; shell surface covered with low, concentric ridges moderately inflated, maximum inflation just behind the umbonal region, curving down gradually to the marginal areas; dorsal margin long, almost straight; anterior auricle short, triangular, separated by a distinct notch for the byssus; posterior auricle elongate, narrowing down to a point at the tip; posterior margin broadly concave; anterior margin convex; cardinal area narrow, extending to the posterior auricle. Colour of shell dusky brown, auricles chestnut; nacre light metallic blue.

Measurements (in millimetres)

	Holotype	Paratype
Length (including the auricles). . .	30	29
Height.	16.8	15
Maximum diameter	7.5	7

Habitat: — Three shells of this interesting species were collected at Buka or Cyrus Bay, south coast of Rotti Island (St. 299), Anchorage east off Sailus Besar, Paternoster Islands (St. 315) and $1^1/_2$ mile south of Tandjong Lajar, south coast of Bawean Island (St. 222). The Holotype is from St. 222.

Remarks: — *Pteria sibogae* is allied to *P. chinensis* (Leach), and *P. aquatilis* (Reeve), but is distinguished by its shape and the peculiarly sharp and narrow auricles.

Subgenus **Electroma** Stoliczka.

1870. *Electroma* Stoliczka, Cretaceous Faun. S. India, *Pelecypoda*, p. 391.

Stoliczka created this genus for Avicula-like forms with the valves more inequivalve than in true *Avicula* (= *Pteria*), the right valve flatter, a short and almost edentulous hinge-line, and a very short posterior wring not at all separated from the body of the shell.

A number of species of this subgenus described by Reeve and Dunker appear, from the very little differences in the shells, to be only local forms. Unfortunately, however, very little material of this subgenus is available, and it is not possible therefore, to understand the range of variation of the various species.

The genotype, according to Stoliczka, is *P.* (*E.*) *smaragdina* (Reeve).

1. *Pteria* (*Electroma*) *ala corvi* (Dillwyn).

1785. *Ala corvi pendula* etc., Chemnitz, Conch.-Cab., VIII, p. 144, pl. LXXXI, fig. 727.
1790. *Mytilus hirundo* var. γ Gmelin (non Linn.), Syst. Nat. (ed. XIII), p. 3357.
1817. *Mytilus ala-corvi* Dillwyn, Descr. Cat., I, p. 322.
1825. *Mytilus Ala-corvi* Wood, Ind. Test., p. 59, pl. XII, fig. 44.
1830. *Avicula linguatula* Deshayes, Encycloped. Méthod., III, p. 104.
1836. *Avicula linguatula* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 103.
1840. ? *Avicula costellata* Pfeiffer, Krit. Reg., p. 76.
1843. *Avicula Ala-corvi* Hanley, Rec. Biv. Shells, p. 263.
1845. *Avicula alacorvi* Catlow & Reeve, Conch. Nomencl., p. 78.
1853. *Margaritifera semiaurita* Mörch, Cat. Yoldi, II, p. 50.
1856. *Mytilus ala-corvi* Hanley in Wood, Ind. Test., p. 70, pl. XII, fig. 44.
1857. *Avicula ala-corvi* Reeve, Conch. Icon., X, *Avicula*, pl. XII, figs. 44*a*, *b*.
1857. *Avicula linguatula* Adams, H. & A., Gen. Rec. Moll., II, p. 525.
1860. *Avicula ala-corvi* Reeve, Elem. Conch., II, p. 63.
1869. *Avicula ala corvi* Issel, Malacol. Mar. Rosso, p. 95.
1870. *Avicula ala corvi* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1872. *Avicula ala corvi* Dunker in Martini-Chemn. Conch.-Cab. (N. F.), VII (3), *Avicula*, p. 34, pl. X, fig. 7.
1876. *Avicula ala-corvi* Tapparone Canefri, Viag. "Magenta", p. 251.
1877. *Avicula ala corvi* Pagenstecher, Zool. Ergebn. Reise Rothenmeer. Moll., p. 33.
1880. *Avicula ala-corvi* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 316.
1884. *Avicula ala-corvi* Grasset, Ind. Test. Viv., p. 302.
1886. *Avicula ala-corvi* Cooke, Ann. Mag. Nat. Hist., (5) XVII, p. 136.
1890. *Avicula ala-corvi* Paetel, Cat. Conch. Samm., III, p. 202.
1893. *Avicula ala-corvi* Dautzenberg, Bull. Soc. Zool. France, XVII, p. 84.
1898. *Avicula ala-corvi* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 183.
1901. *Avicula ala-corvi* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXIX, p. 288.
1906. *Electroma ala-corvi* Smith, Fauna Geogr. Maldive and Laccadive Archipel., II, p. 623.
1909. *Pteria ala-corvi* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 124.
1910. *Pteria alacorvi* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Avicula* (*Electroma*) *ala-corvi*, Pelseneer, "Siboga" Lamellibranches (Anat.), p. 24.

As has been noted in the account of the subgenus *Electroma*, the insufficient material of the several species described by Reeve and others, makes it almost impossible to decide definitely about the range of variation in shape and colour of the shells of the various species. The older of the two shells, which I assign to this species, agrees in outline with specimens of *P.* (*E.*) *ala corvi* from the Red Sea, but the specimen is much lighter in colour.

Distribution: — *P.* (*E.*) *ala corvi* has been recorded from the Red Sea, the Laccadive and Maldive Archipelagos and Australia. It appears to have a wide distribution in the Indo-Pacific, and probably a number of the socalled species of *Electroma*, described as new species of *Avicula* by Dunker and Reeve, are based on local variations of this species.

The "Siboga" Expedition shells, which I refer to this species, were obtained at Pulu Kaniungan Ketjil (St. 89) and Banda Anchorage (St. 240).

2. *Pteria* (*Electroma*) *ovata* (Quoy & Gaimard).

1785. *Mytilus meleagridis*, etc. Chemnitz, Conch. Cab., VIII, p. 143, pl. LXXXI, fig. 726.
1788. *Mytilus meleagridis* Schröter, Conch. Cab. Namen Reg., p. 77.
1791. Bruguière, Encycloped. Méthod., pl. CLXXVII, fig. 5.
1819. *Avicula papilionacea*, var. *b*, Lamarck, Anim. sans Vertèb., VI, p. 149.
1834. *Meleagrina ovata* and *M. tongana* Quoy & Gaimard, Voy. "Astrolabe". III, pp. 459, 460, pl. LXXVII, figs. 12—15.
1869. *Avicula meleagridis* Dunker, Cat. Mus. Godeffroy, IV, p. 115.
1871. *Avicula meleagris* (sic), von Martens & Langkavel, Donum Bismarckianum, p. 63.
1872. *Avicula meleagridis* Dunker in Martini Chemn. Conch.-Cab. (N. F.), VII (3), *Avicula*, p. 57, pl. XIX, figs. 5, 6.
1890. *Avicula meleagridis* Paetel, Cat. Conch., Samm., III, p. 205.
1906. *Pteria meleagridis* Owston, Japan. Loochooan Shells, p. 34.
1911. *Avicula* (*Electroma*) *meleagridis* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 24, pl. IX, figs. 3, 4.

So far as I have been able to find from a careful scrutiny of the literature, the Chemnitzian name *meleagridis* was not adopted by any of the binomial writers till after the name *ovata* of Quoy & Gaimard. Unfortunately this and the allied species are not well represented in any of the collections that I have examined, but from a careful examination of the material in the British Museum (Nat. Hist.), London, I am of opinion that Reeve's *Avicula smaragdina* [1]) from Moluccos (?) is also a synonym of this species. The single shell, which I assign to *P.* (*E.*) *ovata*, agrees with the description and figures of the Chemnitzian species *meleagridis* in the "Conch.-Cab.".

Distribution: — The records of *P.* (*E.*) *ovata* are very scanty, but it appears to be widely distributed in the Indo-Pacific.

The "Siboga" Expedition collected a single shell at Pulu Kabala-dua, Borneo Bank (St. 79 b). This shell is 32 mm. long, almost transluscent, of a whitish green colour, with a number of darker rays radiating from the umbo to the posterior margin; the rays further have a large number of small black dots arranged irregularly along the middle line.

Genus **Pinctada** Röding.

1756. *Margaritifera* Browne, Nat. Hist. Jamaica, p. 412.
1797. *Margaritifera* (ex parte), Humphrey, Mus. Calonnianum, p. 44.
1798. *Pinctada* (ex parte) Röding, Mus. Boltenianum, p. 166.
1807. *Unionium* Link, Beschreib. Nat. Samm. Univ. Rostock, p. 155.
1811. *Margaritophora* Megerle, Mag. Ges. Naturf. Freunde, Berlin, V, p. 66.
1814. *Margarita* Leach, Zool. Miscell., I, p. 107.
1817. *Perlamater* Schumacher, Essai Nouv. Syst., p. 107.
1819. *Meleagrina* Lamarck, Anim. sans Vertèb., VI, p. 150.
1857. *Margaritifera* Adams, H. & A., Gen. Rec. Moll., II, p. 525.
1857. *Avicula* (ex parte) Reeve, Conch. Icon., X, *Avicula*, pl. 1 (explanation).
1886. *Avicula*, subgen. *Meleagrina* Fischer, P., Man. Conchyliol., p. 952.
1901. *Margaritifera* Jameson, Proc. Zool. Soc. London, p. 372.
1915. *Pinctada* Iredale, Proc. Malacol. Soc. London, XI, p. 305.

The generic name of the Mother-of-Pearl Oysters has undergone several changes, but there can be no doubt that Röding's name *Pinctada*, as Iredale pointed out, has priority over the other names. Iredale selected *Pinctada margaritifera* (Linn.) as the type of the genus.

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[1]) Reeve, L. — Conch. Icon., X, *Avicula*, pl. XII, fig. 45 (1857).

For good descriptions of the genus reference may be made to Adams, Fischer and Jameson.

1. *Pinctada margaritifera* (Linn.).

1685. *Concha margaritifera pleris* Lister, Hist. Conch., pl. CCXXI, fig. 56.
1742. *Concha margaritifera* Gualtieri, Ind. Test. Conch., pl. LXXXIV, figs. E, E.
1748. *Parlemoer-Shulp* etc. Rumph, Amboin. Rarit., p. 154, pl. XLVII, fig. F.
1753. *Mater perlarum* Klein, Tent. Meth. Ostr., p. 123, sp. 319, i.
1758. *Mytilus margaritiferus* Linnaeus, Syst. Nat., (ed. X), p. 704.
1764. *Mytilus margaritiferus* Linnaeus, Mus. Lud. Ulr., p. 538.
1767. *Mytilus margaritiferus* Linnaeus, Syst. Nat., (ed. XII), p. 1155.
1780. *Mytilus margaritiferus* Born, Test. Mus. Caes. Vindobon., p. 123.
1785. *Perlenmutter muschel* etc. Chemnitz, Conch.-Cab., VIII, p. 132, pl. LXXX, fig. 718.
1790. *Mytilus margaritiferus* Gmelin, Syst. Nat., (ed. XIII), p. 3351.
1791. Bruguière, Encycloped. Méthod.. pl. CLVII, figs. 1—4.
1798. *Pinctada Margaritifera* Röding, Mus. Boltenianum, p. 166.
1814. *Margarita sinensis* Leach, Zool. Miscell., I, p. 180, pl. XLVIII.
1817. Savigny, Descr. Egypt., Moll., pl. XI, figs. 7, 1—3.
1817. *Mytilus margaritiferus* Dillwyn, Descr. Cat., I, p. 301.
1819. *Meleagrina margaritifera* (ex parte) Lamarck, Anim. sans Vertèb., VI, p. 151.
1825. *Avicula margaritifera* Blainville, Man. Malacol., p. 531, pl. LXV bis, fig. 7.
1825. *Mytilus margaritiferus* Wood, Ind. Test., p. 56, pl. XII, fig. 4.
1826. *Avicula* (*Meleagrina*) *margaritifera* Audouin, Descr. Egypt., I, p. 53.
1830. *Avicula margaritifera* Deshayes, Encyclopéd. Méthod., I, p. 103.
1836. *Meleagrina margaritifera* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 107.
1841. *Avicula margaritifera* Reeve, Conch. Syst., p. 152, pl. CX.
1843. *Meleagrina Margaritifera* Hanley, Rec. Biv. Shells, p. 264.
1844. ? *Meleagrina margaritifera* Potiez & Michaud, Gal. Douai, II, p. 106.
1847. *Margaritiphora margaritifera* Gray, Proc. Zool. Soc. London, p. 200.
1855. *Mytilus margaritiferus* Hanley, Ipsa Linn. Conch., p. 137.
1855. *Margaritifera communis* Mörch, Cat. Yoldi, II, p. 50.
1856. *Mytilus* (*Meleagrina*) *margaritiferus* Hanley in Wood, Ind. Test., p. 67, pl. XII, fig. 4.
1857. *Avicula Cumingii*, *A. barbata* and *A. margaritifera* Reeve, Conch. Icon., X, *Avicula*, pl. IV, fig. 6, pl. V, fig. 9, pl. VIII, fig. 21.
1857. *Margaritifera margaritifera* Adams, H. & A., Gen. Rec. Moll., II, p. 526, pl. CXXII, figs. 6, 6*a*.
1862. *Meleagrina margaritifera* Chenu, Man. Conchyliol., II, p. 160, fig. 794.
1872. *Avicula* (*Meleagrina*) *margaritifera*, *A.* (*M.*) *Cumingii* and *A.* (*M.*) *barbata* Dunker in Martini Chemn. Conch.-Cab. (N. F.), VII (3), *Avicula*, p. 7, pl. I, fig. 2, pl. III, fig. 2, pl. IX, figs. 2, 3, p. 22, pl. VI, fig. 3, p. 48, pl. XVI, fig. 3.
1878. *Meleagrina margaritifera* Kobelt, Illustr. Conchylienbuch, p. 365, pl. CVII, fig. 9.
1880. *Avicula* (*Meleagrina*) *margaritifera* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 316.
1884. ? *Avicula australis* and *A. margaritifera* Grasset, Ind. Test. Viv., pp. 302, 303.
1886. *Meleagrina margaritifera* Cooke, Ann. Mag. Nat. Hist., (5) XVII, p. 136.
1888. *Meleagrina margaritifera* Jousseaume, Mém. Soc. Zool. France, I, p. 219.
1891. *Meleagrina margaritifera* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 210.
1901. *Meleagrina margaritifera* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXIX, p. 289.
1901. *Margaritifera margaritifera* Jameson, Proc. Zool. Soc. London, p. 373.
1906. *Margaritifera margaritifera* Melvill & Standen, Proc. Zool. Soc. London, p. 803.
1906. *Margaritifera margaritifera* Standen & Leicester, Ceylon Pearl Oyster Rept. V, p. 289.

1909. *Pteria margaritifera* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 468.
1911. *Meleagrina margaritifera* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 25.
1915. *Margaritifera margaritifera* Boettger, Abhandl. Senckenberg. Naturf. Gesell., XXXV, p. 140.
1919. *Meleagrina* (*Pteria*) *margaritifera* Odhner, Arkiv. Zool., XII, N⁰ 6, p. 23.
1925. *Pteria* (*Unionium*) *margaritifera* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N⁰. 9, p. 246.
1926. *Meleagrina margaritifera* Pallary, Mém. Inst. Egypt., XI, p. 117, pl. XV, figs. 7, 1—3.
1928. *Pteria margaritifera* Faustino, Summary Philippine Marine Freshw. Mollusks, p. 26.
1929. *Meleagrina margaritifera* Dautzenberg, Faun. Colon. Français., III, p. 563.

In view of the very confused ideas of the earlier authorities about the Linnean species *Mytilus margaritiferus* it is almost impossible to understand the species of the Mother-of-Pearl Oysters recorded from different localities. The figures of the species also are, in most cases, unsatisfactory and it is no easy task to surmise what species they are intended for. The above synonymy has been drawn up after a careful examination of the literature and the views of such authors as Cooke, Jameson, Lynge and Oostingh, but several doubtful records have not been included.

Jameson's paper cited above contains a detailed account of the species and its distribution. The shells in the "Siboga" collection belong to Jameson's "var (?) *typica*". They vary a great deal in the shells being orbicular or, as in the case of some shells from St. 144, very much elongated in the dorso-ventral direction and the outline becoming somewhat elongated-ovoid. The surface markings and the colouring are also very variable. The largest shell in the collection is about 200 mm. in height.

Distribution: — The geographical distribution of the typical form of *Pinctada margaritifera* is dealt with by Jameson in detail. It may, however, be noted here that it appears to be the common form round Australia, New Guinea, New Britain, the Dutch East Indies and other suitable localities in the Southern Pacific.

The "Siboga" collection contains shells of this species from the Strait of Boleng near Lomblem, Kur reefs, Lumu Lumu, Bay of Labuan Tring, West coast of Lombok (St. 19), Anchorage off Beo, Karakelang Islands (St. 131), Anchorage north of Salomakieë (Damar) Island (St. 144), Anchorage off the south point of Kabaëna Island (St. 209), Saleyer Anchorage (St. 213), Anchorage south of Lucipara Group (St. 225c), Ambon Anchorage (St. 231) and Banda Anchorage (St. 240).

2. *Pinctada vulgaris* (Schumacher).

1785. *Die Perlenmutter muschel* etc. Chemnitz, Conch.-Cab., VIII, p. 126, pl. LXXX, fig. 717.
1817. *Perlamater vulgaris* Schumacher, Essai Nouv. Syst., p. 108, pl. XX, figs. 3, *a*, *b*.
1817. Savigny, Descr. Egypte. Moll., pl. XI, figs. 8, 9.
1819. *Meleagrina albina* Lamarck, Anim. sans Vertèb., VI, p. 152.
1830. *Avicula albina* Deshayes, Encyclopéd. Méthod., I, p. 102.
1843. *Meleagrina Albina* Hanley, Rec. Biv. Shells, p. 264.
1850. *Avicula fucata* Gould, Proc. Boston Soc. Nat. Hist., III, p. 309.
1852. *Avicula badia* Dunker, Zeitschr. Malakozool.. IX, p. 79.
1852—56. *Avicula fucata* Gould, U. S. Expl. Exped., Moll., p. 441, pl. XXXIX, figs. 551*a*, *b*.
1855. *Margaritifera imbricata* Mörch, Cat. Yoldi, p. 51.
1857. *Avicula perviridis*, *A. occa*, *A. aerata* and *A. fucata* Reeve, Conch. Icon., X, *Avicula*, pl. VIII, figs. 20, 24, pl. X, fig. 32, pl. XVII, fig. 74.
1865. *Avicula radiata* Vaillant (nec Deshayes), Journ. Conchyliol., XIII, p. 114.

1869. *Meleagrina Margaritifera* Issel (nec Linn.), Malacol. Mar. Rosso, p. 95.
1872. *Avicula* (*Meleagrina*) *badia*, *A.* (*M.*) *varia*, *A.* (*M.*) *occa*, *A.* (*M.*) *aerata*, *A.* (*M.*) *fucata* and *A.* (*M.*) *perviridis* Dunker, in Martini Chemn. Conch.-Cab. (N. F.), VII (3), *Avicula*, p. 12, pl. II, fig. 7, p. 17, pl. IV, fig. 6, p. 42, pl. XIII, fig. 5, p. 46, pl. XV, fig. 3, p. 49, pl. XVII, fig. 2, p. 53, pl. XVIII, fig. 5.
1878. *Meleagrina Savignyi* Monterosato, Enum. Sinon. etc., p. 5.
1887. *Meleagrina muricata* (= *fucata*), Cooke, Ann. Mag. Nat. Hist., (5) XVII, p. 136.
1896. *Avicula* (*Meleagrina*) *albina* var. *Vaillanti* Vassel, Assoc. Francais. Avan. Sci., p. 10.
1897. *Meleagrina radiata* Bavay, Bull. Soc. Zool. France, XXII, p. 199.
1899. *Meleagrina Savignyi* Monterosato, Journ. Conchyliol., XLVII, p. 392.
1901. *Margaritifera vulgaris* Jameson, Proc. Zool. Soc. London, p. 384.
1904. *Meleagrina occa* Giard, Compt. Rend. Soc. Biol. Paris, p. 255.
1904. *Margaritifera vulgaris* Herdman, Ceylon Pearl Oyster Rept., II, pp. 37—76, pls. I—IX.
1905. *Meleagrina radiata* Tillier & Bavay, Bull. Soc. Zool. France, XXX, p. 177.
1906. *Margaritifera vulgaris* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 289.
1907. *Margaritifera vulgaris* Melvill & Standen, Proc. Zool. Soc. London, p. 803.
1909. *Pteria* (*Margaritifera*) *vulgaris* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 142.
1912. *Meleagrina occa* Pallary, Mém. Inst. Egypt., VII, p. 154, pl. XVIII, figs. 13, 23.
1918. *Pinctada vulgaris* Hedley, Journ. Proc. Roy. Soc. N. S. Wales, LI, Suppl.. p. M. 7.
1919. *Pteria* (*Meleagrina*) *vulgaris* Odhner, Arkiv Zool., XII, n°. 6, p. 4.
1926. *Meleagrina albina* Pallary, Mém. Inst. Egypt., XI, p. 117, pl. XV, figs. 8, 9.
1927. *Pinctada vulgaris* Tomlin, Trans. Zool. Soc. London, XXVI, 301.
1929. *Meleagrina vulgaris* Dautzenberg, Faun. Colon. Français., III, p. 563.
1930. *Pteria* (*Margaritifera*) *vulgaris* Thiele, Faun. Südwest. Austral., V, p. 590.

My remarks on *P. margaritifera* are equally applicable to this species. It has been recorded under various names by different authors, and several ordinary variations from different localities have been described as distinct species.

Distribution: — *P. vulgaris* has a wide range in the Indo-Pacific, the Persian Gulf and the Red Sea. Since the opening of the Suez Canal it has spread into the Mediterranean; it has been recorded from several localities in the Mediterranean littoral of Egypt and from Malta.

The "Siboga" Expedition collected two rather worn shells from the Ambon Reef and Dobo, Aru Islands (St. 272).

3. *Pinctada anomioides* (Reeve). (Plate III, figs. 5—8).

1857. *Avicula Anomioides* Reeve, Conch. Icon., X, *Avicula*, pl. IX, fig. 26.
1872. *Avicula* (*Meleagrina*) *anomides* (sic) Dunker, in Martini-Chemn. Conch.-Cab. (N. F.), VII (3), *Avicula*, p. 54, pl. XVIII, fig. 6.
1901. *Margaritifera anomioides* Jameson, Proc. Zool. Soc. London, p. 384.

Two young shells in the "Siboga" collection are probably the young of *P. anomioides*, but it is not possible to be quite definite, as very little is known about this species of unknown habitat. These two shells resemble the shells from Bazaruto Island from the Ponsonby collection in the British Museum (Nat. Hist.), London. I figure these shells.

The "Siboga" shells were collected in the Bay of Nangamessi Sumba (St. 53).

4. *Pinctada scheepmakeri* (Dunker). (Plate III, figs. 9—12).

1872. *Avicula* (*Meleagrina*) *Scheepmakeri* Dunker, in Martini-Chemn. Conch.-Cab. (N.F.), VII (3), *Avicula*, p. 6, pl. I, fig. 1.

1890. *Meleagrina scheepmakeri* Paetel, Cat. Conch. Samm., III, p. 205.
1901. *Margaritifera scheepmakeri* Jameson, Proc. Zool. Soc. London, p. 384.

Jameson had no specimens of this species before him, but suggested that it probably is synonymous with *P. sugillata* (Reeve). In the "Siboga" collection there is a single rather worn shell, which, except for size, agrees with Dunker's description of the species, and is quite distinct from Reeve's *P. sugillata*. For reference I figure this shell.

Distribution: — The habitat of the type-specimen was not known.

The "Siboga" shell was collected in the Bay of Badjo, west coast of Flores (St. 50).

5. *Pinctada tegulata* (Reeve).

1857. *Avicula tegulata* Reeve, Conch. Icon., X, *Avicula*, pl. VII, fig. 17.
1860. *Avicula tegulata* Reeve, Elem. Conch., II. p. 64.
1890. *Meleagrina tegulata* Paetel, Cat. Conch. Samm., III, p. 206.
1901. *Margaritifera tegulata* Jameson, Proc. Zool. Soc. London, p. 392.
1910. *Meleagrina tegulata* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.

Jameson was unable to decide the exact status of this species. In the "Siboga" collection there are a number of young shells which undoubtedly belong to Reeve's species. The shells are squarish with the hinge margin almost straight and the umbo hardly projecting. The posterior part of the shell is formed by a broad non-nacreous wing and the shell is not very tumid. The yellowish-brown coloured shells bear a large number of rows of flattened somewhat triangular scales.

Distribution: — *P. tegulata* was described from Moreton Bay, Australia.

In the "Siboga" collection the shells, which I refer to this species, were collected in the Bay of Nangamessi, Sumba (St. 53) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

6. *Pinctada sugillata* (Reeve).

1857. *Avicula sugillata, A. irradians* and *A. fimbriata* (Reeve non Dunker), Reeve, Conch. Icon., X, *Avicula*, pl. IX, fig. 27, pl. X, fig. 35, pl. IX, fig. 25.
1860. *Avicula irradians, A. fimbriata* and *A. sugillata* Reeve, Elem. Conch., II, pp. 63, 64.
1872. *Avicula* (*Meleagrina*) *Reeviana* Dunker, in Martini Chemn. Conch.-Cab. (N. F.), VII (3), *Avicula*, p. 45, pl. XV, fig. 1.
1890. *Avicula irradians* and *A. sugillata* Paetel, Cat. Conch. Samm., III, pp. 205, 206.
1894. *Margaritifera fimbriata* Henn, Proc. Linn. Soc. N. S. Wales, (2), IX, p. 181.
1901. *Margaritifera sugillata* Jameson, Proc. Zool. Soc. London, p. 380.
1910. *Meleagrina sugillata* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Meleagrina irradians* Pelseneer, "Siboga" Lamellibranches (Anat.). p. 25.
1916. *Pinctada sugillata* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 25.

As Jameson remarked, the form of the shell of *P. sugillata* is very variable. The valves are moderately convex and the hinge-line is, for the size of the shells, rather narrow. The lip is normally covered over by lappet-like processes, but these are very delicate and easily broken. The lip is of a dirty yellow colour with traces of brown markings. The nacre is shining metallic white with greenish or yellowish tints shining through.

Distribution: — All previous records of *P. sugillata* are from the Australian waters.

In the "Siboga" collection it is represented by young shells collected at St. 25 (8°48′.9 S., 115°38′ E., 118 metres), Sailus Ketjil, Paternoster Islands (St. 37), Bay of Nangamessi, Sumba

(St. 53), Pulu Sebangkatan, Borneo Bank (St. 81), Inner side of Muaras Reef, east coast of Borneo (St. 91), Anchorage off Sawan, Siau Island (St. 125), Banda Anchorage (St. 240) and Anchorage between Nusa Besi and the N. E. point of Timor (St. 282).

Genus **Malleus** Lamarck.

1799. *Malleus* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 82.
1815. *Tudes* Oken, Lehrbuch Reg., pl. XVIII.
1817. *Himantopoda* (ex parte) Schumacher, Essai Nouv. Syst., p. 109.
1847. *Malleus* Gray, Proc. Zool. Soc. London, p. 199.
1857. *Malleus* Adams, H. & A., Gen. Rec. Moll., II, p. 527.
1858. *Malleus* Reeve, Conch. Icon., XI, *Malleus*, pl. I (description).
1886. *Malleus* Fischer, P., Man. Conchyliol., p. 954.
1890. *Malleus* Clessin in Martini & Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 3.

Good descriptions of the genus are to be found in the works of Reeve, Fischer and Clessin. The genotype is *Malleus malleus* (Linn.).

1. *Malleus malleus* (Linn.).

1741. *Ostreum divisum* Rumph., Amboin. Rarit., p. 158, pl. XLVII, fig. H.
1742. *Ostreum divisum seu Malleus brachiatus* D'Argenville, Hist. Nat., pp. 313, 316, pl. XXII, fig. A.
1742. *Concha longa brachiata* Gualtieri, Ind. Test., pl. XCVI, figs. D, D, E.
1753. *Tudes polonica* Klein, Tent. Meth. Ostr., p. 121, pl. VIII, fig. 14.
1757. *Ostreum divisum seu Malleus brachiatus* D'Argenville, La Conch., pp. 273, 277, pl. XIX, fig. A.
1758. *Tudes polonica aut Concha cruciata* Seba, Mus., III, p. 181, pl. XCI, figs. 4, 5, 5, pl. XCIII, figs. 1, 1, 2, 2.
1758. *Ostrea Malleus* Linnaeus, Syst. Nat., (ed. X), p. 699.
1764. *Ostrea Malleus* Linnaeus, Mus. Lud. Ulr., p. 533.
1767. *Ostrea Malleus* Linnaeus, Syst. Nat., (ed. XII), p. 1147.
1767. *Ostreum divisus* Petiver, Anim. Amboin., p. 4, pl. XX, fig. 10.
1778. *Ostrea malleus* Born, Ind. Nat. Mus. Caes. Vindobon., p. 97.
1780. *Ostrea malleus* Born, Test. Mus. Caes. Vindobon., p. 111.
1780. *Huitre* Favanne, Conchyl., pl. XLII, fig. A 1.
1785. *Ostrea Malleus Linnaei* Chemnitz, Conch.-Cab., VIII, p. 8, pl. LXX, fig. 655.
1788. *Ostrea malleus* Barbut, Gen. Verm., p. 55, pl. IX, fig. 1.
1788. *Ostrea malleus* Schröter, Conch.-Cab. Namen Reg. p. 77.
1790. *Ostrea malleus* Gmelin, Syst. Nat., (ed. XIII), p. 3333.
1797. *Margaritifera Malleus* Humphrey, Mus. Calonnianum, p. 44.
1798. *Pinctada Malleus* Röding, Mus. Boltenianum, p. 167.
1799. *Malleus malleus* Lamarck, Mem. Soc. Hist. Nat. Paris, p. 82.
1801. *Malleus vulgaris* Lamarck, Syst. Anim. sans Vertèb., p. 133.
1802. *Malleus vulgaris* Bosc, Hist. Nat. Moll., II, p. 290.
1805. *Malleus vulgaris* de Roissy in Buffon, Hist. Nat. Moll., VI, p. 302, pl. LXIII, fig. 5.
1817. *Ostrea malleus* Dillwyn, Descr. Cat., I, p. 272.
1817. *Himantopoda vulgaris* Schumacher, Essai Nouv. Syst., p. 109.
1819. *Malleus vulgaris* Lamarck, Anim. sans Vertèb., VI, p. 144.
1823. *Malleus vulgaris* Blainville, Dict. Sci. Nat., XXXII, p. 314, pl. XC, fig. 4.
1824. *Malleus vulgaris* Dubois, Epitome, p. 110.
1825. *Malleus vulgaris* Blainville, Man. Malacol., p. 527, pl. LXIII, fig. 4.

1825. *Malleus vulgaris* Sowerby, Cat. Tankerville, p. 24.
1825. *Ostrea Malleus* Wood, Ind. Test., p. 52, pl. XI, fig. 58.
1830. *Ostrea vulgaris* Sowerby, Gen. Shells, II, fig. 1.
1831. *Ostrea vulgaris* Deshayes, Encycloped. Méthod., II, p. 420.
1834. *Malleus vulgaris* Griffith & Pidgeon, Anim. Kingdom, p. 598, pl. XI, fig. 1.
1836. *Malleus vulgaris* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 91.
1837. *Malleus vulgaris* Cuvier, Animal Kingdom, Moll., pl. XXXII bis, fig. 1.
1841. *Malleus vulgaris* Reeve, Conch. Syst., p. 148, pl. CVII, fig. 1.
1843. *Malleus vulgaris* Hanley, Rec. Biv. Shells, p. 260.
1844. *Malleus vulgaris* Potiez & Michaud, Gal. Douai, II, p. 98.
1845. *Malleus vulgaris* Catlow & Reeve, Conch. Nomencl., p. 77.
1846. *Malleus vulgaris* Chenu, Illustr. Conchyliol., *Malleus*, pl. I, fig. 4, pl. II, fig. 1.
1847. *Malleus Malleus* Gray, Proc. Zool. Soc. London, p. 199.
1853. *Malleus vulgaris* Mörch, Cat. Yoldi, II, p. 50.
1853. *Malleus vulgaris* Philippi, Handb. Conch. Malacol., p. 371.
1855. *Malleus vulgaris* Berge, Conchylienbuch, p. 89, pl. XIII, fig. 1.
1855. *Ostrea malleus* Hanley, Ipsa Linn. Conch., p. 114.
1856. *Ostrea malleus* Hanley in Wood, Ind. Test., p. 62, pl. XI, fig. 58.
1857. *Malleus vulgaris* Adams, H. & A., Gen. Rec. Moll., II, p. 528, pl. CXXIII, figs. 2, 2*a*.
1858. *Malleus vulgaris* Reeve, Conch. Icon., XI, *Malleus*, pl. II, fig. 5.
1860. *Malleus vulgaris* Reeve, Elem. Conch., II, p. 65.
1862. *Malleus vulgaris* Chenu, Man. Conchyliol., II, p. 163, fig. 814.
1867. *Malleus vulgaris* Mitchell, Cat. Mus. Madras, p. 74.
1869. *Malleus vulgaris* Dunker, Cat. Mus. Godeffroy, IV, p. 115.
1872. *Malleus vulgaris* von Martens, Malacol. Blätt., XIX, p. 48.
1874. *Malleus vulgaris* Dunker, Cat. Mus. Godeffroy, V, p. 176.
1876. *Malleus vulgaris* Tapparone Canefri, Viag. "Magenta", p. 252.
1878. *Malleus vulgaris* Kobelt, Illustr. Conchylienbuch, p. 366, pl. CVII, fig. 2.
1881. *Malleus vulgaris* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 5.
1884. *Malleus vulgaris* Grasset, Ind. Test. Viv., p. 305.
1884. *Malleus vulgaris* Tryon, Struct. Syst. Conch., III, p. 281, pl. CXXXI, fig. 74.
1886. *Malleus vulgaris* Fischer, P., Man. Conchyliol., p. 954, pl. XVI, fig. 20.
1890. *Malleus vulgaris* Paetel, Cat. Conch. Samm., III, p. 207.
1890. *Malleus vulgaris* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 5, pl. II, figs. 1, 2.
1891. *Malleus vulgaris* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 210.
1896. *Malleus vulgaris* Casto de Elera, Cat. Sist. Filip., p. 798.
1905. *Malleus vulgaris* Hidalgo, Cat. Filip., p. 368.
1906. *Malleus vulgaris* Owston, Japan. Loochooan Shells, p. 34.
1906. *Malleus vulgaris* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 289.
1910. *Malleus malleus* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1913. *Malleus vulgaris* Woodward, B. B., Life of Mollusca, pl. XVII, fig. 16.
1914. *Malleus vulgaris* Iredale, Proc. Zool. Soc. London, p. 666.
1916. *Malleus malleus* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 156.
1928. *Malleus vulgaris* Faustino, Summary Philippine Marine Freshw. Moll., p. 27.
1930. *Malleus malleus* Thiele, Faun. Südwest Austral., V, p. 591.

This widely distributed species is represented in the "Siboga" collections by four adult shells the largest of which is over 200 mm. in length. Unfortunately there are no young shells of the species in the collection.

Distribution: — *Malleus malleus* is widely distributed in the Indo-Pacific Region.

In the "Siboga" collection there are four specimens of this species, which were collected at Saleyer (St. 213).

2. *Malleus albus* Lamarck.

1795. *Ostrea Malleus albus* Chemnitz, Conch.-Cab., XI, p. 257, pl. CCVI, figs. 2029, 2030.
1797. *Margaritifera bipennis* Humphrey, Mus. Calonnianum, p. 44.
1817. *Ostrea malleus* var. Dillwyn, Descr. Cat., I, p. 273.
1819. *Malleus albus* Lamarck, Anim. sans Vertèb., VI, p. 144.
1823. *Malleus albus* Blainville, Dict. Sci. Nat., XXIX, p. 258.
1824. *Malleus albus* Dubois, Epitome, p. 110.
1825. *Malleus albus* Sowerby, Cat. Tankerville, p. 24.
1831. *Malleus albus* Deshayes, Encyclopéd. Méthod., II, p. 420.
1836. *Malleus albus* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 91.
1839. *Malleus albus* Deshayes & Milne-Edwards in Lamarck, Anim. sans Vertèb., III, p. 37.
1840. *Malleus albus* Pfeiffer, Krit. Register, p. 110.
1841. *Malleus normalis* var. Delessert, Réc. Coq., pl. XIV, figs. 5*a*, *b*.
1843. *Malleus Albus* Hanley, Rec. Biv. Shells, p. 260, pl. XXIV, fig. 38.
1844. *Malleus albus* Potiez & Michaud, Gal. Douai, II, p. 98.
1845. *Malleus albus* Catlow & Reeve, Conch. Nomencl., p. 77.
1846. *Malleus Albus* Chenu, Illustr. Conchyliol., *Malleus*, pl. I, fig. 1.
1853. *Tudes albus* Mörch, Cat. Yoldi, II, p. 50.
1855. *Malleus albus* Berge, Conchylienbuch, p. 89.
1857. *Malleus albus* Adams, H. & A., Gen. Rec. Moll., II, p. 528.
1858. *Malleus albus* Reeve, Conch. Icon., XI, *Malleus*, pl. I, fig. 1.
1860. *Malleus albus* Reeve, Elem. Conch., II, p. 65.
1862. *Malleus albus* Chenu, Man. Conchyliol., II, p. 163, fig. 815.
1865. *Malleus albus* Angas, Proc. Zool. Soc. London, p. 930.
1869. *Malleus albus* Dunker, Cat. Mus. Godeffroy, IV, p. 115.
1869. *Malleus albus* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 886.
1869. *Malleus albus* Lischke, Japan. Meeresconch., I, p. 162.
1869. *Malleus albus* Lischke, Japan. Meeresconch., II, p. 153.
1874. *Malleus albus* Dunker, Cat. Mus. Godeffroy, V, p. 176.
1882. *Malleus albus* Dunker, Ind. Moll. Mar. Japon., p. 230.
1884. *Malleus albus* Grasset, Ind. Test. Viv., p. 304.
1885. *Malleus albus* Smith, "Challenger" Lamellibranchia, p. 284.
1890. *Malleus albus* Paetel, Cat. Conch. Samm., III, p. 207.
1890. *Malleus albus* Clessin in Martini-Chemn. Conch.-Cab., (N. F.), VIII (1), *Malleacea*. p. 4, pl. I, figs. 1, 2.
1891. *Malleus albus* Smith, Proc. Zool. Soc. London, p. 433.
1892. *Malleus albus* Crosse & Fischer, Journ. Conchyliol., XL, p. 75.
1895. *Malleus albus* Pilsbry, Cat. Mar. Moll. Japan, p. 147.
1896. *Malleus albus* Casto de Elera, Cat. Sist. Filip., p. 798.
1902. *Malleus albus* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1904. *Malleus albus* Pritchard & Gatliff, Proc. Roy. Soc. Victoria, XVII, p. 258, pl. I.
1905. *Malleus albus* Hidalgo, Cat. Filip., p. 368.
1906. *Malleus albus* Owston, Japan. Loochooan Shells, p. 34.
1909. *Malleus albus* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 145.
1910. *Malleus albus* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1918. *Malleus albus* Hedley, Journ. Proc. Roy. Soc. N. S. Wales, LI, Suppl., p. M. 7.

The single shell in the "Siboga" collection agrees with the detailed description of *M. albus* by CLESSIN and does not differ in any important respect from shells from a large number of localities with which I have compared it.

Distribution: *M. albus* has a wide distribution in the Indo-Pacific. For detailed list of localities reference may be made to LYNGE's paper cited above.

The single shell in the "Siboga" collection was picked up on the pearl banks near the Anchorage off Pulu Jedan, east coast of Aru Islands (St. 273).

3. *Malleus daemonicus* Reeve. (Plate III, figs. 13—18).

1858. *Malleus daemonicus* Reeve, Conch. Icon., XI, *Malleus*, pl. II, fig. 6.
1860. *Malleus daemonicus* Reeve, Elem. Conch., II, p. 65.
1884. *Malleus daemonicus* Grasset, Ind. Test. Viv., p. 304.
1887. *Malleus daemonicus* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 204.
1890. *Malleus daemonicus* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 11, pl. III, fig. 5.
1905. *Malleus daemonicus* Hidalgo, Cat. Filip., p. 368.
1911. *Malleus daemonicus* Pelseneer, "Siboga" Lamellibranches (Anat.), pl. VII, figs. 9—11, pl. VIII, fig. 1.
1929. *Malleus daemonicus* Faustino, Summary Philippine Marine Freshw. Moll., p. 27.

Malleus daemonicus is a very interesting species in that its shell appears to undergo a great deal of change, in its outline, during growth. The youngest shell, which I have seen, is about 10 mm. in length and is very thin, subquadrate in outline and without any trace of auricles on either side of the hinge. Older shells appear to grow more obliquely, and are either tongue-shaped or even subquadrate; they often have an auricle anterior to the hinge-line. Older shells also show the concentrically ridged laminae referred to by Reeve in his description of the species. The largest specimen of the species in the "Siboga" collection resembles full-grown shells of *M. regula* (Forskål) in shape, but is comparatively much broader and has the internal longitudinal ridge in the calcareous posterior elongated part of the shell less well developed. I figure a series of shells of different ages of this species.

Distribution: — This species has so far been recorded from the Philippines and Mergui Archipelago.

In the "Siboga" collection there are shells of all ages from St. 25 (8° 48′.9 S., 115° 38′ E.; 118 metres), Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago (St. 93), Fau Anchorage (St. 149), Saleyer Anchorage (St. 213), Banda Anchorage (St. 240) and Anchorage East of Dangar Besar, Saleh Bay (St. 313).

4. *Malleus regula* (Forskål).

1775. *Ostrea regula* Forskål, Descr. Anim., p. 124.
1785. *Ostrea Forskalii* Chemnitz, Conch.-Cab., VIII, p. 15, pl. LXX, fig. 657.
1788. *Ostrea regula* Schröter, Conch.-Cab. Namen. Reg., p. 77.
1790. *Ostrea valsella* Gmelin, Syst. Nat., (ed. XIII), p. 3333.
1791. Bruguière, Encycloped. Méthod., pl. CLXXVII, fig. 15.
1798. *Pinctada regula* Röding, Mus. Boltenianum, p. 168.
1802. *Malleus vulsella* Bosc, Hist. Nat. Coq., II, p. 290.
1817. *Marteau* Savigny, Descr. Egypte, pl. XIII, figs. 1: 1—3, 2: 1—3, 3: 1—3, 4.
1817. *Himantopoda truncata* Schumacher, Essai Nouv. Conch., p. 110. pl. II, figs. 3*a*, *b*.
1817. *Ostrea regula* Dillwyn, Descr. Cat., I, p. 273.
1819. *Malleus vulsellatus* Lamarck, Anim. sans Vertèb., VI, p. 145.
1823. *Malleus vulsellatus* Blainville, Dict. Sci. Nat., XXIX, p. 258.
1824. *Malleus vulsellatus* Blainville, Dict. Sci. Nat., XXXII, p. 314.
1824. *Malleus vulsellatus* Dubois, Epitome, p. 110.

1825. *Malleus vulsellatus* Blainville, Man. Malacol., p. 527, pl. LXV bis, fig. 4.
1825. *Malleus vulsellatus* Sowerby, Cat. Tankerville, p. 24.
1831. *Malleus vulsellatus* Deshayes, Encyclopéd. Méthod., II, p. 420.
1836. *Malleus vulsellatus* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 92.
1840. *Malleus vulsellatus* Pfeiffer, Krit. Reg., p. 74.
1843. *Malleus Vulsellatus* Hanley, Rec. Biv. Shells, p. 260.
1845. *Malleus vulsellatus* Catlow & Reeve, Conch. Nomencl., p. 77.
1846. *Malleus vulsellatus* Chenu, Illustr. Conchyliol., *Malleus*, pl. II, fig. 3, 3*a*.
1857. *Malleus regula* Adams, H. & A., Gen. Rec. Moll., II, p. 528.
1858. *Malleus regula* Reeve, Conch. Icon., XI, *Malleus*, pl. II, fig. 4.
1860. *Malleus regula* Reeve, Elem. Conch., II, p. 65.
1865. *Malleus regulus* Angas, Proc. Zool. Soc. London, p. 654.
1865. *Malleus regula* Vaillant, Journ. Conchyliol., XIII, p. 114.
1869. *Malleus regula* Issel, Malacol. Mar. Rosso, p. 97.
1870. *Malleus regula* MacAndrew, Ann. Mag. Nat. Hist., (4), VI, p. 449.
1877. *Malleus regula* Pagenstecher, Zool. Ergebn. Reise Rothenmeer. Mollusk., p. 31, pl. I, figs. 17—19.
1882. *Malleus regula* Dunker, Ind. Moll. Japon., p. 231.
1884. *Malleus vulsellatus* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 803.
1886. *Malleus regula* Cooke, Ann. Mag. Nat. Hist., (5) XVII, p. 137.
1888. *Malleus regula* Jousseaume, Mém. Soc. Zool. France, I, p. 220.
1890. *Malleus regula* and *M. vulsellatus* Paetel, Cat. Conch. Samm., III, p. 207.
1890. *Malleus regula* Smith, Proc. Zool. Soc. London, p. 322.
1890. *Malleus vulsellatus* Clessin, in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 7, pl. II, fig. 3.
1891. *Malleus regula* Smith, Proc. Zool. Soc. London, p. 434.
1895. *Malleus regula* Pilsbry, Cat. Mar. Moll. Japan, p. 147.
1896. *Malleus regula* and *M. vulsellatus* Casto de Elera, Cat. Sist. Filip., p. 798.
1905. *Malleus Regula* Hidalgo, Cat. Filip., p. 368.
1905. *Malleus regula* Tillier & Bavay, Bull. Soc. Zool. France, XXX, p. 177.
1906. *Malleus regula* Owston, Japan. Loochooan Shells, p. 34.
1909. *Malleus regula* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 145.
1911. *Malleus regula* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 25, pl. VIII, figs. 2, 3.
1916. *Malleus regulus* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 156.
1917. *Malleus regula* Odhner, Kungl. Sv. Akad. Handl., LII, n⁰. 16, p. 17.
1919. *Malleus regula* Odhner, Arkiv. Zool., XIV, n⁰. 6, p. 4.
1927. *Malleus regula* Tomlin, Trans. Zool. Soc. London, XXVI, p. 301.
1928. *Malleus regula* Faustino, Summary Philippine Marine Freshw. Moll., p. 27.
1929. *Malleus regula* Dautzenberg, Faun. Colon. Français., III, p. 564.
1930. *Malleus regula* Thiele, Faun. Südwest Austral., V, p. 591.

M. regula is, as was noted by ODHNER, easily recognised by an internal longitudinal ridge on the calcareous part of the elongated shell; the ridge is present even in young shells.

Distribution: — *M. regula* has a wide range in the Indo-Pacific and the Red Sea.

In the "Siboga" collection there are three specimens collected at Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago (St. 93), Anchorage off Lilintah, South Coast of Misool (St. 176) and Saleyer (St. 213).

5. *Malleus regula* var. *decurtata* Lamarck.

1819. *Malleus decurtatus* Lamarck, Anim. sans Vertèb., VI, p. 145.
1825. *Malleus decurtatus* Sowerby, Cat. Tankerville, p. 24.
1836. *Malleus decurtatus* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 93.

1858. *Malleus tigrinus* and *M. decurtatus* Reeve, Conch. Icon., XI, *Malleus*, pl. III. figs. 7, 10.
1860. *Malleus tigrinus* Reeve, Elem. Conch., II, p. 65.
1870. *Malleus tigrinus* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 449.
1886. *Malleus decurtatus* Cooke, Ann. Mag. Nat. Hist., (5) XVII, p. 137.
1890. *Malleus decurtatus* and *M. tigrinus* Paetel, Cat. Conch. Samm., III, p. 207.
1890. *Malleus decurtatus* and *M. tigrinus* Clessin in Martini-Chemn. Conch-Cab. (N. F.), VIII (1), *Malleacea*, p. 10, pl. III, figs. 2—4.
1897. *Malleus tigrinus* Sowerby, Mar. Shells S. Africa, Suppl., p. 27.
1909. *Malleus regula* var. *decurtatus* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 145.
1911. *Malleus tigrinus* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 26, pl. VII, fig. 12.
1919. *Malleus regula* var. *decurtata* Odhner, Arkiv. Zool., XII, N⁰ 6, p. 4.
1929. *Malleus regula* var. *decurtata* Dautzenberg, Faun. Colon. Français., III, p. 564.

I agree with Odhner and Dautzenberg that Lamarck's *Malleus decurtatus* is only a variety of *M. regula* (Forskål). Cooke was also right in including *M. tigrinus* Reeve and probably *M. solitaria* Reeve [1]) in the synonymy of this form.

Distribution: — *M. regula* var. *decurtata* has a wide range of distribution in the Indo-Pacific and the Red Sea. For a detailed list of localities reference may be made to Lynge's paper cited above.

In the "Siboga" collection it is represented by young shells from the Bay of Nangamessi, Sumba (St. 53), Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago (St. 93), Nalahia Bay, Nusa Laut Island (St. 234), Anchorage between Nusa Besi and the N.E. point of Timor (St. 282) and St. 310 (8° 30′ S., 119° 7′.5 E.; 73 metres).

Family PECTINIDAE.

Subfamily SPONDYLINAE.

Genus **Spondylus** Linn.

1758. *Spondylus* Linnaeus, Syst. Nat., (ed. X), p. 690.
1823. *Spondylus* Children, Quart. Journ. Sci. Lit. Arts, XV, pp. 41, 42.
1847. *Spondylus* Sowerby, Thes. Conch., I, p. 417.
1847. *Spondylus* Gray, Proc. Zool. Soc. London, p. 201.
1856. *Spondylus* Reeve, Conch. Icon., IX, *Spondylus*, pl. I, (explanation).
1858. *Spondylus* Adams, H. & A., Gen. Rec. Moll., II, p. 559.
1858. *Spondylus* Küster in Martini-Chemn. Conch.-Cab. (N. F.), VII, (2), *Pectinacea*, p. 1.
1886. *Spondylus* Fischer, P., Man. Conchyliol., p. 938.
1898. *Spondylus* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 758.
1915. *Spondylus* Fulton, Journ. Conch., XIV, p. 331.
1925. *Spondylus* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 75.

Spondylus gaederopus Linn. was designated as the type of the genus *Spondylus* by Children.

Good descriptions of the genus are published in the works of Sowerby, Adams, Küster, Fischer and Woodring.

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1) Reeve's type of this species is, as noted by Cooke, no longer available, and there are no other specimens of it in the Cuming collection.

Cox [1]) has recently discussed the question of the rejection of the names of the genus *Spondylus* as introduced in SCHREIBER's "Versuch einer vollständigen Conchylienkenntniss nach LINNE's System (1793)", and I agree that this work should not be allowed to upset the accepted nomenclature of the well established names.

In addition to the species of *Spondylus* recorded or described in the following pages there were a few young specimens in the "Siboga" collection which could not be identified with certainty.

1. *Spondylus regius* Linn.

1757. *Ostreum auritum* etc. D'Argenville, La Conch., pp. 274, 279, pl. XX, fig. 20.
1758. *Spondylus regius* Linnaeus, Syst. Nat., (ed. X), p. 690.
1764. *Spondylus regius* Linnaeus, Mus. Lud. Ulr., p. 511.
1767. *Spondylus regius* Linnaeus, Syst. Nat., (ed. XII), p. 1136.
1780. *Huitre* Favanne, Conch., pl. XLIII, fig. E.
1784. *Spondylus regius* etc., Chemnitz, Conch.-Cab., VII, p. 83, pl. XLVI, fig. 471.
1788. *Spondylus regius* Barbut, Gen. Vermium, p. 43, pl. V, fig. 2.
1788. *Spondylus regius* Schröter, Conch.-Cab. Namen Reg., p. 99.
1790. *Spondylus regius* Gmelin, Syst. Nat., (ed. XIII), p. 3298.
1802. *Spondylus regius* Bosc, Hist. Nat. Coq., II, p. 315.
1817. *Spondylus regius* Dillwyn, Descr. Cat., I, p. 210.
1819. *Spondylus regius* Lamarck, Anim. sans Vertèb., VI, p. 190.
1824. *Spondylus regius* Dubois, Epitome, p. 121.
1825. *Spondylus regius* Sowerby, Cat. Tankerville, p. 26.
1827. *Spondylus regius* Blainville, Dict. Sci. Nat., L, p. 324.
1832. *Spondylus regius* Deshayes, Encycloped. Méthod., III, p. 979.
1836. *Spondylus regius* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 187.
1840. *Spondylus regius* Pfeiffer, Krit. Reg., p. 67.
1841. *Spondylus regius* Reeve, Conch. Syst., I, p. 165, pl. CXIX, fig. 8.
1841. *Spondylus regius* Delessert, Rec. Coq. Lamarck, pl. XX, fig. 1, 2.
1843. *Spondylus regius* Chenu, Illustr. Conchyliol., p. 4, *Spondylus*, pl. VII, figs. 1, 2.
1844. *Spondylus regius* Potiez & Michaud, Gal. Douai, II, p. 66.
1845. *Spondylus regius* Catlow & Reeve, Conch. Nomencl., p. 85.
1847. *Spondylus regius* Sowerby, Thes. Conch., I, p. 424, pl. LXXXVII, fig. 30.
1855. *Spondylus Regius* Hanley, Ipsa Linn. Conch., p. 83.
1856. *Spondylus regius* Reeve, Conch. Icon., IX, *Spondylus*, pl. V, fig. 20.
1856. *Spondylus Regius* Hanley, Rec. Biv. Shells, p. 291.
1856. *Spondylus regius* Hanley in Wood, Ind. Test., p. 52, pl. IX, fig. 2.
1858. *Spondylus regius* Küster in Martini-Chemn. Conch.-Cab. (N. F.), VII (2), *Pectinacea*, p. 16, pl. V, fig. 1.
1858. *Spondylus regius* Adams, H. & A., Gen. Rec. Moll., II, p. 561.
1858. *Spondylus regius* Chenu, Encyclopéd. Hist. Nat. Moll., p. 200, pl. X, fig. 2.
1860. *Spondylus regius* Reeve, Elem. Conch., II, p. 54.
1862. *Spondylus regius* Chenu, Man. Conchyliol., II, p. 191, fig. 966.
1878. *Spondylus regius* Kobelt, Illustr. Conchylienbuch, p. 375.
1882. *Spondylus regius* Dunker, Ind. Moll. Mar. Japon., p. 245.
1884. *Spondylus regius* Tryon, Struct. Syst. Conch., III, p. 285, pl. CXXXI, figs. 71, 73.
1890. *Spondylus regius* Paetel, Cat. Conch. Samm., III, p. 240.
1895. *Spondylus regius* Pilsbry, Cat. Mar. Moll. Japan, p. 143.
1905. *Spondylus regius* Hidalgo, Cat. Filip., p. 384.
1905. *Spondylus regius* Hidalgo, Rev. R. Acad. Cienc., II, p. 16.
1906. *Spondylus regius* Owston, Japan. Loochooan Shells, p. 35.

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[1]) Cox, L. R. — Proc. Malacol. Soc. London, XVIII, pp. 251—254 (1929).

1911. *Spondylus regius* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 32.
1915. *Spondylus regius* Fulton, Journ. Conch., XV, p. 335.
1928. *Spondylus regius* Faustino, Summary Philippine Mar. Freshw. Moll., p. 35.

The two odd valves in the "Siboga" collection which I refer to this species are both young shells and do not show the characteristic form and sculpture of this beautiful species. These shells are of a purple red colour, and the sculpture consists of several low ridges with small spines and 6—7 ribs bearing long straight and pointed spines.

Distribution: — *Spondylus regius* is apparently confined to the Pacific Ocean, from Japan in the North to the New Guinea and Flores Coast in the South.

The "Siboga" Expedition collected a young worn valve in the Bay of Bima (St. 47) and dredged a larger valve at St. 164 (1°42′.5 S., 130°47′.5 E., 32 metres).

2. *Spondylus pes-asininus* Röding.

1741. *Lazarus Klap* Rumph, Amboin. Rarit., p. 160, pl. XLVIII, fig. 2.
1757. *Ostreum globosum* etc. D'Argenville, La Conch., pp. 274, 277, pl. XIX, fig. G.
1758. *Crepitaculum leprosi clausum* and *C. leprosi sordide rubellum* Seba, Thes.. III, p. 180, pl. LXXXVIII, figs. 10, 10, 11, 11, pl. LXXXIX, figs. 5, 5.
1764. *Le Manteau de Lazare* Knorr, Delices Yeux, I, p. 22, pl. IX, fig. 2.
1780. *Huitre* Favanne, Conch., pl. XLII, fig. E.
1784. *Spondylus foliaceus* etc. and *Spondylus Gaederopus ex mari Chinae imperium* etc. Chemnitz, Conch.-Cab., VII, p. 85, pl. XLVI, figs. 472, 473, p. 75, pl. XLIV, figs. 461, 462.
1788. *Spondylus foliaceus* Schröter, Conch.-Cab. Namen Reg., p. 99.
1790. *Spondylus Gaedaropus* var. ε Gmelin, Syst. Nat., (ed. XIII), p. 3296.
1798. *Spondylus Pes-asininus* Röding, Mus. Boltenianum, p. 194.
1811. *Spondylus digitatus* Perry, Conchology, pl. LIX, fig. 3.
1819. *Spondylus costatus* and *S. multilamellatus* (ex parte) Lamarck, Anim. sans Vertèb., VI, p. 189.
1824. *Spondylus multilamellata* Dubois, Epitome, p. 121.
1832. *Spondylus costatus* Deshayes, Encyclopéd. Méthod., III, p. 979.
1836. *Spondylus costatus* and *S. multilamellatus* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 186.
1840. *Spondylus multilamellatus* Pfeiffer, Krit. Register, p. 67.
1844. *Spondylus costatus* Chenu, Illustr. Conchyliol., *Spondylus* pl. XXII, figs. 1, 1*a*, 1*b*, 2, 2*a*, 2*b*, 3, 3*a*, 3*b*.
1845. *Spondylus costatus* Catlow & Reeve, Conch. Nomencl., p. 85.
1847. *Spondylus Petroselinum* Sowerby, Thes. Conch., I, p. 419, pl. LXXXIV, figs. 6—10, pl. LXXXVIII, fig. 9.
1853. *Spondylus foliaceus* Mörch, Cat. Yoldi, II, p. 61.
1856. *Spondylus foliaceus* and *S. imbutus* Reeve, Conch. Icon., IX, *Spondylus*, pl. VII, figs. 25*a*, 25*b*, pl. XV, fig. 55.
1856. *Spondylus Foliaceus* Hanley, Rec. Biv. Shells, p. 290.
1858. *Spondylus foliaceus* Küster in Martini-Chemn. Conch.-Cab. (N. F.), VII (2), *Pectinacea*, p. 6, pl. I, figs. 3, 4, pl. V, figs. 2, 3.
1858. *Spondylus foliaceus* Adams, H. & A., Gen. Rec. Moll., II, p. 560.
1860. *Spondylus foliaceus* and *S. imbutus* Reeve, Elem. Conch., II, p. 54.
1881. *Spondylus foliaceus* De Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 4.
1884. *Spondylus foliaceus* Grasset, Ind. Test. Viv., p. 306.
1890. *Spondylus foliaceus* Paetel, Cat. Conch. Samm., III, p. 239.
1891. *Spondylus foliaceus* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 208.
1896. *Spondylus foliaceus* Casto de Elera, Cat. Sist. Filip., p. 812.
1899. *Spondylus foliaceus* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 182.

1905. *Spondylus foliaceus* Hidalgo, Cat. Filip., p. 383.
1910. *Spondylus foliaceus* Hedley, Austral. Ass. Adv. Sci., XII, p. 345.
1915. *Spondylus pesasininus* Fulton, Journ. Conch., XIV, p. 354.
1928. *Spondylus foliaceus* Faustino, Summary Philippine, Mar. Freshw. Moll., p. 34.

There can be no doubt that the species *S. digitatus* Perry, *S. costatus* Lam., *S. multilamellata* Lam. (ex parte) and *S. petroselinum* are all based on the Chemnitzian species *S. foliaceus*. FULTON has rightly adopted for this species RÖDING's name *S. pes-asininus*.

S. foliaceus has a ponderous shell and the surface is covered with strong ridges, 6—8 of which bear elongated foliaceus spines.

Distribution: — *S. pes-asininus* is widely distributed in the Pacific Ocean, and has also been recorded from Mauritius.

The "Siboga" expedition collected a worn old specimen at the Anchorage off Pulu Kawassang, Paternoster Islands (St. 40) and a young shell in the Bay of Badjo, West Coast of Flores (St. 50).

3. *Spondylus hystrix* Röding.

1771. *Huitre epineuse bariolée* Knorr, Delices Yeux, V, p. 13, pl. VII, figs. 2, 3.
1784. *Spondyli nicobarici* etc. Chemnitz, Conch-Cab., VII, p. 82, pl. XLV, figs. 469, 470.
1788. *Spondylus nicobaricus* Schröter, Conch.-Cab. Namen Reg., p. 99.
1790. *Spondylus gaederopus* vars. λ and μ Gmelin, Syst. Nat. (ed. XIII), p. 3297.
1798. *Spondylus hystrix* Röding, Mus. Boltenianum, p. 195.
1819. *Spondylus radians* Lamarck, Anim. sans Vertèb., VI, p. 192.
1824. *Spondylus radians* Dubois, Epitome, p. 122.
1825. *Spondylus coccineus* Sowerby (nec Lamarck), Cat. Tankerville, p. 26.
1833. *Spondylus aculeatus* Broderip, Proc. Zool. Soc. London, p. 5.
1836. *Spondylus radians* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 191.
1847. *Spondylus nicobaricus*, *S. coccineus* (non Lamarck) and *S. ciliatus* Sowerby, Thes. Conch., I, p. 428, pl. LXXXVIII, fig. 48, p. 430, pl. LXXXVIII, fig. 47 and p. 429, pl. LXXXIX, fig. 52.
1856. *Spondylus Coccineus* (nec Lamarck) and *S. Radians* Hanley, Rec. Biv. Shells, pp. 291, 292.
1856. *Spondylus ciliatus* and *S. coccineus* (nec Lamarck) Reeve, Conch. Icon., IX, *Spondylus*, pl. I, fig. 4, pl. XII, fig. 44.
1860. *Spondylus Nicobaricus* Reeve, Elem. Conch., II, p. 54.
1863. *Spondylus nicobaricus* Deshayes, Cat. Ile Réunion, p. 35.
1869. *Spondylus coccineus* von Martens, von Decken's Reise, p. 66.
1877. *Spondylus Nicobaricus* Liénard, Cat. Ile Maurice, p. 70.
1880. *Spondylus Nicobaricus* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 312.
1884. *Spondylus nicobaricus* Grasset, Ind. Test. Viv., p. 306.
1890. *Spondylus Nicobaricus* Paetel, Cat. Conch. Samm., III, p. 240.
1897. *Spondylus nicobaricus* Sowerby, Mar. Shells S. Africa, Supp., p. 28.
1905. *Spondylus Nicobaricus* Hidalgo, Cat. Filip., p. 383.
1906. *Spondylus nicobaricus* Melvill & Standen, Proc. Zool. Soc. London, p. 811.
1909. *Spondylus coccineus* Melvill & Standen, Trans. Linn. Soc. London (Zool.), XIII, p. 129.
1910. *Spondylus nicobaricus* Hedley, Austral. Ass. Adv. Sci., XII, p. 345.
1910. *Spondylus coccineus* Dautzenberg, Journ. Conchyliol., LVII, p. 30.
1915. *Spondylus hystryx* (sic) Fulton, Journ. Conch., XIV, p. 334.
1928. *Spondylus coccineus*, *S. hystrix* and *S. nicobaricus* Faustino, Summary Philippine Marine Freshw. Mollusks, pp. 34, 35.
1929. *Spondylus nicobaricus* Dautzenberg, Faun. Colon. Français., III, p. 559.

Spondylus hystrix has usually an orbicular shell, and the shell valves are covered with fine ridges bearing large numbers of thin, long, erect spines. The shells are of a white or straw colour, and there are usually a fair number of light purple dots scattered irregularly on this background.

Distribution: — *S. hystrix* is widely distributed in the Indo-Pacific Region, and has also been recorded from the Persian Gulf.

In the "Siboga" collection there is a single young specimen of the species collected from the Lumu Lumu shoal, Borneo Bank (St. 78).

4. *Spondylus hystrix* var. *ocellatus* Reeve.

1856. *Spondylus ocellatus* Reeve, Conch. Icon., IX, *Spondylus*, pl. XII, fig. 43.
1858. *Spondylus ocellatus* Adams, H. & A., Gen. Rec. Moll., II, p. 561.
1858. *Spondylus ocellatus* Küster in Martini-Chemn. Conch.-Cab. (N. F.), VII (2), *Pectinacea*, p. 23, pl. IX, fig. 4.
1860. *Spondylus ocellatus* Reeve, Elem. Conch., II, p. 54.
1884. *Spondylus ocellatus* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 803.
1890. *Spondylus ocellatus* Paetel, Cat. Conch. Samm., III, p. 240.
1896. *Spondylus ocellatus* Casto de Elera, Cat. Sist. Filip., p. 813.
1899. *Spondylus ocellatus* Hedley, Mem. Austral. Mus., III, pp. 493, 528.
1905. *Spondylus ocellatus* Hidalgo, Cat. Filip., p. 384.
1909. *Spondylus coccineus* Lynge (ex parte, non Lamarck) Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 150.
1915. *Spondylus hystryx* var. *ocellatus* Fulton, Journ. Conch., XIV, p. 334.
1916. *Spondylus hystrix* var. *ocellatus* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 158.
1928. *Spondylus ocellatus* Faustino, Summary Philippine Mar. Freshw. Moll., p. 35.

Reeve's species *S. ocellatus* is, as Fulton concluded, only a variety of *S. hystrix*. The shells of this form differ usually in being more oblique and having a more delicate sculpture. Lynge was of opinion that *S. ducalis*, *S. fragilis* and several other species of Reeve and Sowerby are only varieties of the same form. With the material available I am unable to offer any definite remarks regarding this suggestion, but there can be little doubt that they are very closely allied forms.

Distribution: — *S. hystrix* var. *ocellatus* has so far been recorded from round Australia and the Philippines. The two records from the "Siboga" collection are from the Java and Banda seas.

The "Siboga" Expedition collected a fair number of shells of this variety at the Anchorage off Pulu Kawassang, Paternoster Islands (St. 40) and the Anchorage South of Lucipara Group (St. 225).

5. *Spondylus ducalis* Röding.

1758. *Huitre de couleur cendrée* etc., Seba, Thes., III, p. 179, pl. LXXXVIII, figs. 4, 4, 9.
1784. *Spondylus ducalis*, etc. Chemnitz, Conch.-Cab., VII, p. 89, pl. XLVII, figs. 477, 478.
1788. *Spondylus ducalis* Schröter, Conch.-Cab. Namen Reg., p. 99.
1790. *Spondylus gaedaropus*, var. π, Gmelin, Syst. Nat., (ed. XIII), p. 3297.
1797. Bruguière, Encycloped. Méthod., pl. CXCIII, figs. 2*a*, *b*.
1798. *Spondylus ducalis* Röding, Mus. Boltenianum, p. 194.
1819. *Spondylus ducalis* Lamarck, Anim. sans Vertèb., VI, p. 191.
1824. *Spondylus ducalis* Dubois, Epitome, p. 122.
1825. *Spondylus ducalis* var., Sowerby, Cat. Tankerville, p. 26.
1830. *Spondylus ducalis* Sowerby, Gen. Shells, II, fig. 4.

1836. *Spondylus ducalis* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 189.
1840. *Spondylus ducalis* Pfeiffer, Krit. Reg., p. 67.
1841. *Spondylus ducalis* Reeve, Conch. Syst., I, p. 165, pl. CXVII, fig. 4.
1843. *Spondylus ducalis* Chenu, Illustr. Conchyliol., p. 4, pl. VIII, figs. 2, 3, 3*a*.
1845. *Spondylus ducalis* Catlow & Reeve, Conch. Nomencl., p. 85.
1847. *Spondylus ducalis* Sowerby, Thes. Conch., I, p. 426, pl. LXXXV, fig. 16.
1853. *Spondylus ducalis* Mörch, Cat. Yoldi, II, p. 60.
1855. *Spondylus ducalis* Berge, Conchylienbuch, p. 97.
1856. *Spondylus ducalis* Reeve, Conch. Icon., IX, *Spondylus*, pl. VII, fig. 26.
1856. *Spondylus Ducalis* Hanley, Rec. Biv. Shells, p. 291.
1858. *Spondylus ducalis* Küster in Martini-Chemn. Conch-Cab. (N. F.), VII (2), *Pectinacea*, p. 9, pl. III, figs. 1, 2.
1858. *Spondylus ducalis* Adams, H. & A., Gen. Rec. Moll., II, p. 560.
1860. *Spondylus ducalis* Reeve, Elem. Conch., II, p. 54.
1862. *Spondylus ducalis* Chenu, Man. Conchyliol., II, p. 192, figs. 972, 973.
1869. *Spondylus ducalis* Dunker, Cat. Mus. Godeffroy, IV, p. 116.
1869. *Spondylus ducalis* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 887.
1869. *Spondylus ducalis* Lischke, Japan. Meeresconch., I, p. 171.
1871. *Spondylus ducalis* Lischke, Japan. Meeresconch., II, p. 160.
1878. *Spondylus ducalis* Kobelt, Illustr. Conchylienbuch, p. 375.
1881. *Spondylus ducalis* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 4.
1889. *Spondylus ducalis* Crosse & Fischer, Journ. Conchyliol., XXXVII, p. 291.
1890. *Spondylus ducalis* Paetel, Cat. Conch. Samm., III, p. 239.
1891. *Spondylus ducalis* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 208.
1896. *Spondylus ducalis* Casto de Elera, Cat. Sist. Filip., p. 812.
1897. *Spondylus ducalis* Sowerby, Mar. Shells S. Africa, p. 28.
1905. *Spondylus ducalis* Hidalgo, Cat. Filip., p. 383.
1906. *Spondylus ducalis* Owston, Japan. Loochooan Shells, p. 35.
1910. *Spondylus ducalis* Dautzenberg, Journ. Conchyliol., LVIII, p. 30.
1911. *Spondylus ducalis* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 32.
1915. *Spondylus ducalis* Fulton, Journ. Conch., XIV, p. 337.
1925. *Spondylus ducalis* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N⁰ 9, p. 259.
1928. *Spondylus ducalis* Faustino, Summary Philippine Mar. Freshw. Mollusks, p. 34.

As I have suggested in my remarks on *Spondylus hystrix* var. *ocellatus* there is some difficulty in separating *S. ducalis* from other closely allied forms. I have some doubts whether *S. lamarcki* Chenu (loc. cit., p. 6, pl. IX, figs. 3, 3*a*, 4, 4*a*) is also not based on worn and aged specimens of *ducalis*.

The shell of *S. ducalis* is triangularly ovate, and the surface sculpture consists of closely set and fairly deep radial striations. In addition there are about 10 ribs bearing large, flattened scales. The interspaces between the ribs are as broad or broader than the ridges themselves. In older shells the foliaceous scales are often lost and the shell surface has only the raised ridges alternating with the close set ribs; the form of the shells at this stage is, as REEVE noted in the case of *S. lamarcki*, more Pecten-like. REEVE's distinction of *S. ducalis* of "the contrast of the rows of white scales upon the blue grey ground of the interstices" is applicable to young and fresh specimens only.

Distribution: — *S. ducalis* appears to be widely spread in the Indo-Pacific.

The "Siboga" Expedition obtained mostly dead shells from the Kur and Roma reefs, Pulu Kaniungan Ketjil (St. 89), Sanana Bay, East coast of Sula Besi (St. 193), Saleyer (St. 213) and Tual Anchorage, Kei Islands (St. 258).

6. *Spondylus imperialis* Chenu.

1844. *Spondylus Imperialis* Chenu, Illustr. Conchyliol., p. 6, *Spondylus*, pl. XXVI, figs. 2, 2*a*, 3, 3*a*, *b*.
1847. *Spondylus imperialis* Sowerby, Thes. Conch., I, p. 424, pl. LXXXVIII, figs. 43, 44.
1853. *Spondylus imperialis* Mörch, Cat. Yoldi, II, p. 60.
1856. *Spondylus imperialis* Reeve, Conch. Icon., IX, *Spondylus* pl. VIII, fig. 28, pl. XVI, fig. 28*b*.
1856. *Spondylus Imperialis* Hanley, Rec. Biv. Shells, p. 291.
1858. *Spondylus imperialis* Küster, in Martini-Chemn. Conch.-Cab. (N. F.), VII (2), *Pectinacea*, p. 21, pl. IX, fig. 1.
1860. *Spondylus imperialis* Reeve, Elem. Conch., II, p. 54.
1862. *Spondylus imperialis* Chenu, Man. Conchyliol., II, p. 191, fig. 967.
1869. *Spondylus imperialis* Dunker, Cat. Mus. Godeffroy, IV, p. 116.
1869. *Spondylus imperialis* Frauenfeld, Verhandl. Zool.-bot. Ges. Wien, XIX, p. 887.
1884. *Spondylus imperialis* Grasset, Ind. Test. Viv., p. 306.
1890. *Spondylus imperialis* Paetel, Cat. Conch. Samm., III, p. 239.
1903. *Spondylus imperialis* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 621.
1904. *Spondylus imperialis* Smith, Ann. Mag. Nat. Hist., (7) XIV, p. 13.
1906. *Spondylus imperialis* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 288.
1914. *Spondylus imperialis* Fulton, Journ. Conch., XIV, p. 335.

This beautiful species is distinguished by having six radiating ribs with strong, long and pointed spines, and in the interspaces 2—3 rows of short spined ridges. The "Siboga" examples are all young specimens, not exceeding 50 mm. in height.

Distribution: — *S. imperialis* appears to be mainly confined to the Indian Ocean though specimens have been recorded from China.

The "Siboga" Expedition collected a few young examples from the mid-channel in Solor Strait, off Kampong Menanga (St. 305) and in a trawl at St. 318 (6° 36′.5 S., 114° 55′.5 E., 88 metres).

7. *Spondylus microlepos* Lamarck.

1819. *Spondylus microlepos* Lamarck, Anim. sans Vertèb., VI, p. 192.
1824. *Spondylus microlepos* Dubois, Epitome, p. 122.
1827. *Spondylus microlepos* Blainville, Dict. Sci. Nat., L, p. 325.
1836. *Spondylus mycrolepos* (sic) Deshayes, in Lamarck, Anim. sans Vertèb., VII, p. 190.
1845. *Spondylus microlepas* (sic) Catlow & Reeve, Conch. Nomencl., p. 87.
1847. *Spondylus microlepos* Sowerby, Thes. Conch., I, p. 422, pl. LXXXVIII, fig. 46.
1852. *Spondylus mycrolepas* (sic) Jay, Cat., (ed. IV), p. 89.
1856. *Spondylus microlepos* Reeve, Conch. Icon., IX, *Spondylus*, pl. XVIII, figs. 65*a*, *b*.
1856. *Spondylus Microlepos* Hanley, Rec. Biv. Shells, p. 292.
1858. *Spondylus microlepos* Adams, H. & A., Gen. Rec. Moll., II, p. 561.
1860. *Spondylus microlepos* Reeve, Elem. Conch., II, p. 54.
1890. *Spondylus microlepas* (sic) Paetel, Cat. Conch. Samm., III, p. 240.
1911. *Spondylus microlepas* (sic) Pelseneer, "Siboga" Lamellibranches (Anat.), p. 32.
1915. *Spondylus microlepos* Fulton, Journ. Conch., XIV, p. 336.

Spondylus microlepos is a small, somewhat deformed species, and has a very reduced type of sculpture consisting of only a few radiating ridges and striae, which are irregularly beaded, and a few short spines or scales near the margins.

Distribution: — *S. microlepos* is confined to the Pacific Ocean.

The "Siboga" Expedition obtained a few shells from Sapeh Strait (St. 49 a), Bay of Badjo, West coast of Flores (St. 50), Bay of Nangamessi, Sumba (St. 53), St. 98 (6° 9′ N., 120° 21′ E., 350 metres), Saleyer (St. 213) and at Sulu.

8. *Spondylus wrightianus* Crosse.

1848. *Spondylus armatus* Sowerby, (nec Goldfuss), Thes. Conch., I, p. 424, pl. LXXXIX, fig. 53.
1872. *Spondylus Wrightianus* Crosse, Journ. Conchyliol., XX, p. 360.
1873. *Spondylus Wrightianus* Crosse, Journ. Conchyliol., XXI, p. 253, pl. IX, fig. 1, 1*a*.
1884. *Spondylus Wrightianus* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 803.
1884. *Spondylus victoriae* var. *wrightianus* Smith, Rept. Voy. "Alert", p. 114.
1885. *Spondylus victoriae* var. *wrightianus* Smith, "Challenger" Lamellibranchia, p. 286.
1890. *Spondylus Wrightianus* Paetel, Cat. Conch. Samm., III, p. 240.
1915. *Spondylus wrightianus* Fulton, Journ. Conch., XIV, p. 336.
1916. *Spondylus wrightianus* Hedley, Journ. Proc. Roy. Soc. West Australia, I, p. 158.
1917. *Spondylus victoriae* var. *wrightianus* Odhner, Kungl. Sv. Akad. Handl., LII, n⁰ 16, p. 8.

Smith regarded *Spondylus wrightianus* Crosse as a variety of *S. victoriae* Sowerby, but I agree with Hedley and Fulton that it is a distinct species. The shell of *S. wrightianus* is more ovoidal, its hinge-line much narrower, the spine rows more numerous (6—8), and the spines on the upper valve straighter and not spreading outwards as in *S. victoriae*.

Distribution: — *S. wrightianus* appears to be a fairly common species round the Australian coasts.

The "Siboga" Expedition dredged a single upper valve at St. 164 (1° 42′.5 S., 130° 47′.5 E., 32 metres).

9. *Spondylus serraticosta* sp. nov. (Plate III, figs. 19, 20).

The following is a description of this new species: — Shell medium-sized, suborbicular, moderately solid; upper left valve only slightly convex, lower right valve more inflated; auricles small; sculpture of right valve consisting of 7 to 10 very low radial ribs, bearing thin, strong, long, pointed spines much larger nearer the periphery, interspaces densely covered with small hairy spines; sculpture of left valve similar, but spines fewer and less strongly developed; cardinal area narrower in right than in left valve; shell colour bright orange; interior of shell white to pinkish with a narrow band of orange along the margin of the valves.

Length: 24.3 mm.; height 26.8 mm.; maximum diameter 14 mm.

Habitat: — A single shell of this interesting species was brought up in a Blake Dredge at St. 260 (5° 36′.5 S., 132° 55′.2 E., 90 metres).

Remarks: — *S. serraticosta* resembles *S. multisetosus* Reeve[1]), but the radial ribs and spines of the shells of this new species are less evenly developed and much less foliaceus than in Reeve's species; the colour and form of the shell of the two species are also different.

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[1]) Reeve, L. — Conch. Icon., IX, *Spondylus*, pl. III, fig. 11 (1856).

Subfamily PLICATULINAE.

Genus **Plicatula** Lamarck.

1801. *Plicatula* Lamarck, Syst. Anim. sans Vertèb., p. 132.
1847. *Plicatula* Gray, Proc. Zool. Soc. London, p. 201.
1847. *Plicatula* Sowerby, Thes. Conch., I, *Plicatula*, p. 435.
1886. *Plicatula* Fischer, P., Man. Conchyliol., p. 937.
1895. *Plicatula* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 761.
1925. *Plicatula* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 78.
1930. *Plicatula* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰. 3, p. 114.

For good descriptions of the genus *Plicatula* reference may be made to the works of SOWERBY, FISCHER and WOODRING. The genotype is *Plicatula plicatus* (Linn.)[1], as has been recently elucidated by STEWARD. There is some difficulty, however, as to what *P. plicatus* of Linnaeus represents. HANLEY[2]) was of opinion that it is the same as *P. imbricata* as figured in SOWERBY's Thes. Conch., I, pl. XCI, figs. 14, 15, but GUALTIERI's figure cited by LINNAEUS is certainly not of that species; it is probably *P. muricata* Sowerby.

The anatomy of *Plicatula* has been recently worked out by WATSON[3]), and I follow his suggestion in placing *Plicatula* in a distinct Subfamily, Plicatulinae, equal in rank to Amusiinae, Pectininae, and Spondylinae of the family Pectinidae.

1. *Plicatula australis* Lamarck.

1819. *Plicatula australis* Lamarck, Anim. sans Vertèb., VI, p. 185.
1824. *Plicatula australis* Dubois, Epitome, p. 119.
1836. *Plicatula australis* Deshayes, in Lamarck, Anim. sans Vertèb., VII, p. 177.
1845. *Plicatula australis* Catlow & Reeve, Conch. Nomencl., p. 84.
1847. *Plicatula australis* Sowerby, Thes. Conch., I, *Plicatula*, p. 436, pl. XCI, figs. 20—22.
1848. *Plicatula australis* Krauss, Südafr. Moll., p. 30.
1856. *Plicatula Australis* Hanley, Rec. Biv. Shells, p. 288, pl. XXIV, fig. 44.
1858. *Plicatula australis* Adams, H. & A., Gen. Rec. Moll., II, p. 562.
1860. *Plicatula australis* Reeve, Elem. Conch., II, p. 55.
1873. *Plicatula australis* Sowerby in Reeve, Conch. Icon., XIX, *Plicatula*, pl. III, figs. 10*a*, *c*—*e*.
1884. *Plicatula australis* Grasset, Ind. Test. Viv., p. 305.
1890. *Plicatula Australis* Paetel, Cat. Conch. Samm., III, p. 241.
1892. *Plicatula australis* Sowerby, Mar. Shells S. Africa, p. 66.
1899. *Plicatula australis* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 181.
1905. *Plicatula australis* Hidalgo, Cat. Filip., p. 385.
1906. *Plicatula australis* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 464.
1910. *Plicatula australis* Hedley, Austral. Ass. Adv. Sci., XII, p. 345.
1911. *Plicatula australis* Pelseneer, "Siboga" Lamellibranches (Anat.) p. 32, pl. XII, fig. 11.
1917. *Plicatula australis* Odhner, Kungl. Sv. Akad. Handl., LII, no. 16, p. 15.
1918. *Plicatula australis* Hedley, Proc. Roy. Soc. N. S. Wales, LI, Suppl., p. M. 9.
1919. *Plicatula australis* Odhner, Arkiv Zool., XII, no. 6, p. 4.
1928. *Plicatula australis* Faustino, Summary Philippine Marine Freshw. Moll., p. 33.
1929. *Plicatula australis* Dautzenberg, Faun. Colon. Français., III, p. 588.

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1) LINNAEUS, E. C. — Syst. Nat. (ed. XII), p. 1136 (1767).
2) HANLEY, S. — Ipsa Linn. Conch., pp. 83, 84 (1855).
3) WATSON, H. — Proc. Malacol. Soc. London, XIX, pp. 25—31, pl. V (1930).

The subcircular shell of *P. australis* bears on the upper somewhat convex valve a large number of raised irregularly radiating ridges. These ridges are not equally developed all along, but are interrupted here and there, more particularly near the margins, and make the shell in such areas almost spinous; in worn shells the spines are reduced to simple knobs. The colour of the shells is dull yellow with a large number of small black dots scattered all over the surface.

Distribution: *P. australis* has been recorded from the Australian Seas, the Philippines, Madagascar and South Africa.

In the "Siboga" collection there are a number of weathered shells from the Bay of Badjo, West coast of Flores (St. 50), Anchorage south of Lucipara Group (St. 225 c) and Ambon Anchorage (St. 231). Probably two young shells from St. 225 a, b are also to be referred to this species.

2. *Plicatula chinensis* Mörch.

1843. *Plicatula imbricata* Menke, Moll. Nov. Hollandiae, p. 35.
1847. *Plicatula imbricata* Sowerby (ex parte, nec Koch & Dunker), Thes. Conch., I, *Plicatula*, p. 437, pl. XC, fig. 6, pl. XCI, figs. 15—17.
1853. *Plicatula chinensis* Mörch, Cat. Yoldi, II, p. 61.
1856. *Plicatula Imbricata* Manley, Rec. Biv. Shells, p. 288.
1873. *Plicatula imbricata* Sowerby (ex parte, nec Koch & Dunker), in Reeve, Conch. Icon., XIX, *Plicatula*, pl. I, figs. 4*a*, *b*, *d*.
1880. *Plicatula imbricata* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 313.
1890. *Plicatula imbricata* Jousséaume, Mém. Soc. Zool. France, I, p. 223.
1898. *Plicatula imbricata* Melvill & Standen, Proc. Malacol. Soc. London, III, p. 46.
1899. *Plicatula imbricata* Hedley, Mem. Austral. Mus., III, pp. 492, 528.
1899. *Plicatula imbricata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 181.
1902. *Plicatula imbricata* Shopland, Proc. Malacol. Soc. London, V, p. 179.
1909. *Plicatula imbricata* Lynge (ex parte), D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 152.
1910. *Plicatula imbricata* Hedley, Austr. Ass. Adv. Sci., XII, p. 345.
1916. *Plicatula imbricata* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 158.
1919. *Plicatula imbricata* Odhner, Arkiv Zool., XII, n⁰. 6, p. 4.
1929. *Plicatula imbricata* Dautzenberg, Faun. Colon. Francais., III, p. 558.

Menke's name *Plicatula imbricata* was changed by Mörch to *P. chinensis* owing to Koch & Dunker having previously described a cretaceous fossil under this name. Lynge in his account of this species has suggested combining almost all the known species of the genus under one specific name, but he apparently did not have sufficient material at his disposal.

The ovate to subcircular outline of the shell, the distantly placed angular ribs, covered with short foliaceous spines are characteristic of this species.

Distribution: — *P. chinensis* has a wide range in the Indo-Pacific.

In the "Siboga" collection it is represented by young and half grown shells from Macassar (St. 71) and St. 274 (5° 28′.2 S., 134° 53′.9 E., 57 metres).

3. *Plicatula horrida* Dunker.

1847. *Plicatula imbricata* Sowerby (ex parte, nec Koch & Dunker), Thes. Conch. I, *Plicatula*, p. 437, pl. XCI, fig. 18.
1873. *Plicatula imbricata* (ex parte), Sowerby in Reeve, Conch. Icon., XIX, *Plicatula*, pl. I, fig. 4*c*.

1882. *Plicatula horrida* Dunker, Ind. Moll. Mar. Japon., p. 247, pl. XI, fig. 6, 7.
1895. *Plicatula horrida* Pilsbry, Cat. Mar. Shells Japan, p. 143.
1906. *Plicatula horrida* Owston, Japan. Loochooan Shells, p. 35.

Plicatula horrida is closely allied to *P. chinensis* and may turn out to be only a local variation of it. The shells, which I refer to this species agree with DUNKER's descriptions and figures, and are distinguished from those of *P. chinensis* by the ridges on the surface being fewer, more angulate and much more spinous.

Distribution: — *P. horrida* has so far been recorded from the Japanese seas only.

In the "Siboga" collection it is represented by a young shell from the Anchorage East of Sailus Besar, Paternoster Islands (St. 313), and an odd greatly weathered valve dredged from St. 98 (6° 9′ N., 120° 21′ E., 350 metres).

4. *Plicatula muricata* Sowerby.

1873. *Plicatula muricata* Sowerby in Reeve, Conch. Icon. XIX, *Plicatula*, pl. III, figs. 9, *a*, *b*.
1874. *Plicatula muricata* Thielens, Descr. Coll. Paulucci, p. 61.
1882. *Plicatula muricata* Dunker, Ind. Moll. Mar. Japon., p. 247, pl. XI, fig. 4.
1890. *Plicatula muricata* Paetel, Cat. Conch. Samm., III, p. 241.
1895. *Plicatula muricata* Pilsbry & Stearns, Cat. Mar. Moll. Japan p. 143.
1906. *Plicatula muricata* Owston, Japan. Loochooan Shells, p. 35.
1911. *Plicatula muricata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 32, pl. XII, fig. 12.

This species was, so far as I can find from the literature, never described by ADAMS, and SOWERBY apparently was the first to publish figures and description of it in "Conchologia Iconica".

The young shells of *P. muricata* are trigonal and not so oblique as the older shells of this species. The young shells are very closely and regularly pleated, but in older shells the sculpture becomes somewhat irregular and the fine spines appear as raised, elongated spines of the type found on shells of *P. australis* or even *P. horrida*. Concentric growth lines are also very well marked in young shells.

Distribution: — *P. muricata* was described from specimens of unknown habitat in the British Museum collection. DUNKER referred shells from Japan to this species and other authors have since recorded Japanese specimens under this name.

In the "Siboga" collection there is a good series of shells from the Western Entrance Samau Strait (St. 59), St. 98 (6° 9′ N., 120° 21′ E., 350 metres), between the Islands of Wowoni and Buton, northern entrance of Buton Strait (St. 204) and near Kei Islands (St. 260).

5. *Plicatula* sp.

Two shells dredged from St. 164 (1° 42′.5 S., 130° 47′.5 E., 32 metres) are greatly worn specimens of this genus attached to bits of shells of *Ostrea* and *Arca* respectively. They do not correspond to any previously described species, but in view of the large number of species that have been described already, I do not propose describing a new species based on such unsatisfactory material.

Family Dimyidae.

Genus **Dimya** Rouault.

1859. *Dimya* Rouault, Mém. Soc. Geol. France, (2) III, p. 470.
1886. *Dimya* Fischer, P., Man. Conchyliol., p. 937.
1898. *Dimya* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 764.

Dimya was believed to be a genus of fossil forms only, but recent species have been referred to it by Dall, Bartsch and Kuroda.

The genotype is *Dimya deshayesiana* Rouault.

1. *Dimya lima* Bartsch. (Plate III, figs. 21, 22).

1913. *Dimya lima* Bartsch, Proc. U. S. Nat. Mus., XLV, p. 306, pls. XXVII, XXVIII, figs. 5, 6.

I refer a single valve brought up in a trawl at St. 256 (5° 26′.6 S., 132° 32′.5 E., 397 metres) to *Dima lima* Bartsch. The "Siboga" valve is more ovoid than the shells figured by Bartsch, and the hinge area is comparatively narrower. Photographs of this valve are published on pl. III.

Order EULAMELLIBRANCHIA.

Family Limidae.

Genus **Lima** Cuvier.

1798. *Lima* Cuvier, Tab. Elem. Hist. Nat. Anim., p. 421.
1798. *Mantellum* Röding, Mus. Boltenianum, p. 160.
1853. *Ctenoides* and *Radula* Mörch, Cat. Yoldi, II, pp. 56, 57.
1895. *Lima* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 765.
1913. *Lima* Suter, Man. New Zealand Moll., p. 882.
1918. *Lima* Thiele in Martini-Chemn. Conch.-Cab. (N. F.), VII (2*a*), *Limidae*, p. 7.
1925. *Lima* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 79.
1930. *Lima* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 124.
1930. *Lima* Lamy, Journ. Conchyliol., LXXIV, p. 90.

Winckworth [1]) in his carefully drawn up notes has cleared up the very confused synonymy of the genera and subgenera of the family Limidae. As he has pointed out, *Mantellum* Röding is an absolute synonym of *Lima* Cuvier.

The name *Mantellum* as adopted by Mörch and the Adams is quite distinct, and Winckworth by a very judicious selection of *Lima inflata* (Gmelin) as the type for *Limaria* Link [2]) has made this name available for *Mantellum* of these authors.

In addition to the subgenera *Lima s.s.*, with *Lima lima* (Linn.) as type, and *Limaria* Link, there are in the "Siboga" collection representatives of the subgenera *Acesta* H. & A. Adams [3]) — type *Lima* (*Acesta*) *excavata* (Fab.) and *Limatula* S. Wood — type *Lima* (*Limatula*) *subauriculata* (Montagu).

1. *Lima* (*Lima*) *lima* (Linn.). (Plate III, figs. 23, 24).

1684. *Concha canaliculata et squamis asperia* etc., Bonnani, Recr. mentis et oculi, p. 108, pl. XXIII, fig. 71.
1741. *Radula* Rumph, Amboin. Rarit. p. 142, pl. XLIV, fig. *d*.
1742. *Radula, la Ratissoire ou la Rape* d'Argenville, L'Hist. Nat. etc., pp. 338, 342, pl. XXVII, fig. E.
1742. *Concha Pectiniformis* Gualtieri, Ind. Test., pl. LXXXVIII. fig. F.
1753. *Radula* Klein, Test. Method. Ostr., p. 135, pl. IX, fig. 34.
1757. *Radula, la Ratissoire ou la Rape* D'Argenville, La Conchyliol., pp. 301, 304. pl. XXIV, fig. E.

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1) Winckworth, R. — Proc. Malacol. Soc. London, XIX, pp. 115, 116 (1930).

2) Link, H. F. — Beschreib. Nat. Samml. Univ. Rostock, III. p. 157 (1807).

3) I have followed Thiele in considering *Callolima* Bartsch as a synonym of *Acesta* H. & A. Adams, but am not quite certain whether this is correct. The material at my disposal, however, is not sufficient to decide this question definitely.

1758. *Ostrea lima* Linnaeus, Syst. Nat. (ed. X), p. 699.
1764. *Ostrea lima* Linnaeus, Mus. Lud. Ulricae., p. 532.
1767. *Radula* Petiver, Anim. Amboin., p. 2, pl. VIII, fig. 4.
1773. *Ostrea lima* Knorr, Vergnüg. d. Augen, etc., VI, pl. XXXIV, fig. 4.
1780. *Ostrea lima* Born, Test. Mus. Caes. Vindobon., p. 109.
1780. *Peigne* Favanne, La Conchyliol., pl. LIV, fig. N^{1}.
1784. *Radula* Chemnitz, Conch.-Cab., VII, p. 349. pl. LXVIII, fig. 651.
1787. *Pecten lima* Meuschen, Mus. Geversianum, p. 420.
1788. *Ostrea lima* Barbut, Gen. Verm., p. 55, pl. VIII. fig. 5.
1788. *Ostrea lima* Schröter, Conch.-Cab. Namen Reg., p. 77.
1790. *Ostrea lima* Gmelin, Syst. Nat. (ed. XIII), p. 3332.
1798. *Mantellum lima* Bolten, Mus. Boltenianum, p. 161.
1799. *Lima lima* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 88.
1801. *Lima squamosa* Lamarck, Syst. Anim. sans Vertèb., p. 136.
1802. *Lima squamosa* Bosc, Hist. Nat. Coq., p. 252. pl. XI, fig. 1.
1817. *Ostrea lima* Dillwyn, Descr. Cat., I, p. 271.
1819. *Lima squamosa* Lamarck, Anim. sans Vertèb., VI, p. 156.
1823. *Lima squamosa* Blainville, Dict. Sci. Nat., XXVI, p. 443, pl. LXXXVII, fig. 3.
1825. *Lima squamosa* Blainville, Man. Malacol., p. 526, pl. LXII, fig. 3.
1825. *Lima squamosa* Sowerby, Cat. Tankerville, p. 24.
1825. *Ostrea lima* Wood, Ind. Test., p. 51, pl. XI, fig. 54.
1830. *Lima squamosa* Sowerby, Gen. Shells, II, fig. 2.
1836. *Lima squamosa* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 115.
1841. *Lima squamosa* Reeve, Conch. Syst., I, p. 157, pl. CXII, fig. 2.
1843. *Lima squamosa* Hanley, Rec. Biv. Shells, p. 266.
1843. *Lima squamosa* Sowerby, Thes. Conch., I, p. 84, pl. XXI, figs. 1, 18.
1845. *Lima squamosa* Catlow & Reeve, Conch. Nomencl., p. 80.
1850. *Lima squamosa* Deshayes in Cuvier, Règne Anim. p. 191, pl. LXXVI, figs. 1, 1*a*.
1853. *Radula squamosa* Mörch, Cat. Yoldi, II, p. 57.
1855. *Lima squamosa* Berge, Conchylienbuch, p. 93, pl. XIV, fig. 2.
1855. *Ostrea lima* Hanley, Ipsa Linn. Conch., p. 113.
1856. *Ostrea lima* Hanley in Wood, Ind. Test., p. 412, pl. XVI, fig. 11.
1858. *Radula squamosa* and *R. vulgaris* Adams, H. & A,, Gen. Rec. Moll., II, p. 557.
1860. *Lima squamosa* Reeve, Elem. Conch., II, p. 60, pl. XXVIII, fig. 163.
1862. *Lima squamosa* Weinkauff, Journ. Conchyliol., X, p. 329.
1862. *Lima squamosa* Chenu, Man. Conchyliol., II, p. 188, fig. 949.
1863. *Lima Sowerbyi* Deshayes, Cat. Moll. Réunion, p. 30.
1865. *Lima squamosa* Vaillant, Journ. Conchyliol., XIII, p. 112.
1865. *Radula lima* Angos, Proc. Zool. Soc. London, p. 656.
1867. *Lima squamosa* Weinkauff, Conch. Mittelmeer, I, p. 240.
1867. *Lima squamosa* Mitchell, Cat. Mus. Madras, p. 74.
1869. *Lima lima* Dunker, Cat. Mus. Godeffroy, IV, p. 116.
1869. *Lima squamosa* Lischke, Japan. Meeresconch., I, p. 162.
1870. *Lima squamosa* Ancey, Ann. Malacol., I, p. 251.
1871. *Lima squamosa* Lischke, Japan. Meeresconch., II, p. 155.
1872. *Lima squamosa* Sowerby in Reeve, Conch. Icon., XVIII, *Lima*, pl. II, fig. 10.
1873. *Lima squamosa* Jeffreys, Journ. Linn. Soc. London (Zool.), XII, p. 101.
1874. *Lima squamosa* von Martens, Vörderasiat. Conch. p. 90.
1874. *Radula lima* Dunker, Cat. Mus. Godeffroy, V, p. 177.
1876. *Lima zealandica* Sowerby, Proc. Zool. Soc. London, p. 754, pl. LXXV, fig. 1.
1879. *Lima squamosa* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 740.
1882. *Lima squamosa* Dunker, Ind. Moll. Mar. Japon., p. 244.
1885. *Lima squamosa* and *L. multicostata* (ex parte) Smith, "Challenger" Lamellibranchia, p. 287.
1886. *Lima squamosa* Fischer, P., Man. Conchyliol., pp. 940, 941, fig. 708, pl. XVI, fig. 11.
1887. *Lima squamosa* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 202.

1890. *Lima squamosa* Paetel, Cat. Conch. Samm., III, pp. 237, 238.
1891. *Lima squamosa* Smith, Proc. Zool. Soc. London, p. 393.
1892. *Lima squamosa* Tate, Trans. Roy. Soc. S. Australia, XV, p. 136.
1895. *Lima lima* Pilsbry, Cat. Mar. Moll. Japan, p. 143.
1896. *Lima squamosa* Casto de Elera, Cat. Sist. Filip., p. 811.
1897. *Lima squamosa* Sowerby, Mar. Shells S. Africa, Suppl., p. 28.
1897. *Lima squamosa* Watson, Journ. Linn. Soc. London (Zool.), XXVI, p. 290.
1898. *Lima squamosa* Melvill & Standen, Journ. Conch., IX, p. 79.
1899. *Lima squamosa* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 182.
1899. *Lima squamosa* Hedley, Mem. Austral. Mus., III, pp. 493, 528.
1903. *Lima squamosa* Smith, Faun. Geogr. Laccadive, Maldive Archipel. II, p. 621.
1905. *Lima squamosa* Hidalgo, Cat. Filip., p. 381.
1906. *Lima lima* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 464.
1906. *Lima lima* Owston, Japan. Loochooan Shells, p. 35.
1906. *Lima squamosa* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 288.
1908. *Lima lima* Hedley & May, Rec. Austral. Mus. VII, p. 113.
1911. *Lima squamosa* and *L. lima* Pelseneer, "Siboga" Lamellibranchia (Anat.), pp. 33—35, pl. X, fig. 5.
1913—15. *Lima lima* and *L. multicostata* (nec Sowerby) Suter, Man. New Zealand Moll., p. 883, pl. LVIII, fig. 11.
1914. *Lima squamosa* Odhner, Zool. Anz., XLIV, p. 158.
1917. *Lima squamosa* Odhner, Kungl. Sv. Akad. Handl., LII (N⁰. 16), p. 17.
1918. *Lima* (*Radula*) *lima* Thiele, in Martini, Chemn. Conch.-Cab., (N. F.), VII (2*a*), *Limidae*, p. 13, pl. I, fig. 3, pl. II, figs. 1, 11—13.
1919. *Lima squamosa* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXV, p. 482.
1928. *Lima squamosa* Faustino, Summary Philippine Mar. Freshw. Moll., p. 37.
1929. *Lima lima* Dautzenberg, Faun. Colon. Francais., III, p. 560.
1930. *Lima lima* Lamy, Journ. Conchyliol., LXXIV, p. 95.

In view of Hanley's remarks "In the box thus marked in the Linnean Cabinet is still preserved the *Lima squamosa* of authors (Sow. Thes. Conch, vol. I, Lima, f. 1)", there is no reason why the Linnaean name should not be adopted in preference to the later *L. squamosa*; this has already been done by several authors, such as Pilsbry, Hedley, Suter, Thiele, and Dautzenberg. The main difficulty about the identification of this form has been its confusion with species like *L. multicostata* Sow., *L. caribaea* D'Orbigny etc., and to assign to the species an extensive distribution in all the warmer seas. Lischke (1869) was apparently the first to start the confusion and Dall, Dautzenberg and Fischer and other authors have perpetuated and extended the confusion. Unfortunately I have not been able to examine sufficient material of the Mediterranean species and am, therefore, unable to clear up the confusion, but from the material, which I have examined, I have no doubt that the Mediterranean form is distinct from the Indo-Pacific and the Red Sea species.

From the collections which I have been able to examine, I am of opinion, that the species *L. lima* is confined to the Indo-Pacific area only and its range does not extend to the Mediterranean or the Atlantic. The number of ribs varies to 25 or even more and these often bear several rows of sharp, triangular scales, more particularly in the distal half. The form and size of the scales, however, varies greatly in specimens from different localities.

Distribution: — *L. lima* is widely distributed in the Indo-Pacific and in the Red Sea.

The "Siboga" Expedition collected mostly young shells from Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago (St. 93), St. 95 (5° 43′.5 N., 119° 40′ E., depth 522 metres), St. 98

(6° 9′ N., 120° 21′ E., depth 350 metres), St. 156 (0° 29′.2 S., 130° 5′.3 E., depth 469 metres), Banda Anchorage (St. 240), Anchorage between Nusa Besi and the N.E. point of Timor (St. 282) and mid-channel in Solor Strait, off Kampong Menanga (St. 305).

2. *Lima* (*Lima*) *annulata* Lamarck.

1784. *Lima tenera* etc. Chemnitz, Conch.-Cab., VII, p. 354, pl. LXVIII, fig. 653.
1787. *Lima tenera* Abel, Conch.-Cab. Bisch. v. Konstanz, p. 255.
1788. *Lima tenera* Schröter, Conch.-Cab. Namen Reg., p. 59.
1819. *Lima annulata* Lamarck, Anim. sans Vertèb., VI, p. 157.
1836. *Lima annulata* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 117.
1843. *Lima tenera* Hanley, Rec. Biv. Shells, p. 266.
1843. *Lima tenera* Sowerby, Thes. Conch., I, p. 84, pl. XXI, figs. 2, 3, 10, 11, 13.
1845. *Lima tenera* Catlow & Reeve, Conch. Nomencl., p. 80.
1858. *Radula* (*Ctenoides*) *tenera* Adams, H. & A., Gen. Rec. Moll., II, p. 557.
1860. *Lima tenera* Reeve, Elem. Conch., II, p. 60.
1861. *Lima tenera* Tristram, Proc. Zool. Soc. London, p. 405.
1869. *Lima* (*Ctenoides*) *tenera* Dunker, Cat. Mus. Godeffroy, IV, p. 116.
1872. *Lima tenera* Sowerby, in Reeve, Conch. Icon. XVIII, *Lima*, pl. II, fig. 7.
1874. *Lima* (*Ctenoides*) *tenera* Dunker, Cat. Mus. Godeffroy, V, p. 177.
1880. *Lima* (*Ctenoides*) *tenera* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 315.
1885. *Lima* (*Ctenoides*) *tenera* Smith, "Challenger" Lamellibranchia., p. 290.
1890. *Lima* (*Ctenoides*) *tenera* Paetel, Cat. Conch. Samm., III, p. 237.
1896. *Lima* (*Ctenoides*) *tenera* Casto de Elera, Cat. Sist. Filip.. p. 811.
1898. *Lima* (*Ctenoides*) *tenera* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 182.
1899. *Lima tenera* Hedley, Mem. Austral. Mus. III, p. 493.
1902. *Lima tenera* Shopland, Proc. Malacol. Soc. London, V, p. 179.
1903. *Lima tenera* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 621.
1905. *Lima tenera* Hidalgo, Cat. Filip., p. 381.
1906. *Lima* (*Ctenoides*) *scabra* Standen & Leicester (nec Born), Ceylon Pearl Oyster Rept., V, p. 288.
1909. *Lima* (*Ctenoides*) *tenera* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 129.
1910. *Lima tenera* Hedley, Austral. Ass. Adv. Sci., XII, p. 345.
1911. *Lima* (*Ctenoides*) *tenera* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVII, p. 129.
1911. *Lima tenera* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 34.
1918. *Lima* (*Lima*) *tenera* Thiele in Martini, Chemn. Conch.-Cab., (N.F.), VII (2*a*) *Limidae*, p. 9, pl. I, fig. 5.
1930. *Lima* (*Ctenoides*) *annulata* Lamy, Journ. Conchyliol., LXXIV, p. 193.

Lima (*Lima*) *annulata* greatly resembles the West Indian *L.* (*L.*) *scabra* (Born), and has often been confused with it. As Sowerby, however, rightly pointed out the shells of the former species are much thinner and more finely sculptured. Both the species vary in form and outline, but the thin thread-like ribs of *L.* (*L.*) *annulata* terminating in low, sharp points distinguish this species from the West Indian *L.* (*L.*) *scabra*.

Distribution: — The species is widely distributed in the Indian Ocean extending from Zanzibar, Reunion, Mauritius to Singapore. It is also found in the Southern Pacific, having been recorded from the Philippines, Australia and Fiji Islands.

The "Siboga" collection contains one young shell from Pulu Sanguisiapo, Tawi-Tawi Island, Sulu Archipelago (St. 93) and an odd valve from Rumah Kuda Bay, Roma Island (St. 279).

3. *Lima* (*Lima*) *lischkei* Lamy. (Plate III, figs. 25—28).

1877. *Lima japonica* Dunker (non Sowerby), Malakozool. Blätt., XXIV, p. 70.
1882. *Lima japonica* Dunker, Ind. Moll. Mar. Japon., p. 245, pl. XI, figs. 8, 9.
1886. *Lima dunkeri* Smith, "Challenger" Lamellibranchia, p. 291.
1888. *Lima dunkeri* Sowerby, Proc. Zool. Soc. London, p. 208.
1890. *Lima* (*Limatula*) *japonica* Paetel, Cat. Conch. Samm., III, p. 237.
1911. *Lima Dunkeri* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 33.
1918. *Lima* (*Lima*) *dunkeri* Thiele in Martini, Chemn. Conch.-Cab., (N. F.), VII (2a) *Limidae*, p. 10, pl. II, figs. 6, 7.
1930. *Lima* (*Ctenoides*) *Lischkei* Lamy, Journ. Conchyliol., LXXIV, p. 196.

SMITH was quite correct in assuming that the species referred as *L. japonica* by DUNKER was not the same as SOWERBY's species of this name, and as the species represented an undescribed form he suggested the name *L. dunkeri* for it, but since this name is preoccupied LAMY has replaced it by *L.* (*L.*) *lischkei*. The species, as THIELE pointed out, is closely allied to *L. tenera*, but its shell is more arched, less oblique, and the sculpture is much finer.

Distribution: — *L.* (*L.*) *lischkei* has so far been recorded from Japan and the Philippines in the Pacific, and Mauritius in the Indian Ocean.

In the "Siboga" collection it is represented by a large number of shells from near reef of Batjulmati, Java (St. 7), Western entrance, Samau Strait (St. 59), St. 95 (5° 43′.5 N., 119° 40′ E., depth 522 metres), St. 98 (6° 9′ N., 120° 21′ E., depth 350 metres), Saleyer Anchorage (St. 213), Banda Anchorage (St. 240) and 2.3 miles N., 63° W. from North Point of Nuhu Jaan, Kei Islands (St. 260).

4. *Lima* (*Lima*) *tomlini* sp. nov. (Plate III, figs. 29—31).

1885. *Lima lata* Smith (ex parte), "Challenger" Lamellibranchia, p. 287.
1911. *Lima lata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 34, pl. X, fig. 4.

I am convinced after a careful comparison of the unique type-shell of *L. lata* from St. 109, St. Pauls Rock (depth 104 fathoms), mid Atlantic, with the two young shells from St. 201, west side of Mindanao, the Philippines (depth 82 fathoms), which were also considered by the author to be young shells of this species, that the Philippine form is quite distinct from the Atlantic *L. lata*, and belongs to an hitherto undescribed species for which I propose the name *Lima* (*Lima*) *tomlini*.

The following is a description of this species: — Shell small, thin, almost transparent, very oblique, below anterior slope almost circular in outline, moderately swollen; anterior slope rather short, almost straight, greatly reduced anterior auricles nearly hidden in the heart-shaped concavity of the front excavated area; posterior auricles narrow but distinct; posterior slope evenly arched, running imperceptibly into the ventral margin; hinge-area very short, with a short, subcentral, triangular ligamental pit; sculpture consisting of 35—46 very regular, closely placed and rounded ridges separated by almost linear interspaces, the ridges further bear several rows of short, delicate. triangular spines more prominently on the distal halves of the shells; shell margin finely dentate. Colour white, inner surface polished, showing impressions of external radial sculpture.

Measurements (in millimetres).

	Type	
Length	15.2	11.5
Height.	17.5	13.6
Diameter	8.6	6.7

Habitat: — The single fresh holotype of *Lima* (*Lima*) *tomlini* was dredged at St. 251 (5° 28′.4 S., 132° 0′.2 E., depth 204 metres) in the Arafura Sea, and a number of dead shells were dredged at St. 95 (5° 43′.5 N., 119° 40′ E., depth 522 metres). As I have suggested above the "Challenger" specimens from St. 201 in the Philippines are also to be referred to this new species.

Remarks: — *L.* (*L.*) *tomlini* is a very delicate species and though resembling *L.* (*L.*) *lata*, differs from it in form, outline, sculpture and spinulation of the shells.

5. *Lima* (*Limaria*) *fragilis* (Gmelin).

1784. *Pecten fragilis, testa ovali* etc. Chemnitz, Conch.-Cab., VII, pp. 267, 349, pl. LXVIII, fig. 650.
1788. *Pecten fragilis* Schröter, Conch.-Cab. Namen Reg., p. 79.
1790. *Ostrea fragilis* Gmelin, Syst. Nat. (ed. XIII), p. 3332.
1817. *Ostrea fragilis* Dillwyn, Descr. Cat., I, p. 270.
1819. *Lima fragilis* Lamarck, Anim. sans Vertèb., VI, p. 157.
1823. *Lima fragilis* Blainville, Dict. Sci. Nat., XXVI, p. 443.
1825. *Lima fragilis* Sowerby, Cat. Tankerville, p. 24.
1825. *Ostrea fragilis* Wood, Ind. Test., p. 51, pl. XI, fig. 52.
1830. *Lima fragilis* Deshayes, Encyclopéd. Méthod. II, p. 350.
1836. *Lima fragilis* Deshayes in Lamarck, Anim. sans Vertèb. VII, p. 117.
1843. *Lima fragilis* Hanley, Rec. Biv. Shells, p. 267.
1843. *Lima fragilis* Sowerby, Thes. Conch., I, p. 86, pl. XXII, figs. 34—37.
1845. *Lima fragilis* Catlow & Reeve, Conch. Nomencl., p. 79.
1856. *Ostrea fragilis* Hanley in Wood, Ind. Test., p. 61, pl. XI, fig. 52.
1858. *Radula* (*Mantellum*) *fragilis* Adams, H. & A., Gen. Rec. Moll., II, p. 558.
1860. *Lima fragilis* Reeve, Elem. Conch., II, p. 60.
1865. *Lima fragilis* Vaillant, Journ. Conchyliol., XIII, p. 113.
1867. *Lima fragilis* Mitchell, Cat. Mus. Madras, p. 74.
1869. *Lima* (*Mantellum*) *fragilis* Dunker, Cat. Mus. Godeffroy, IV, p. 116.
1870. *Radula* (*Mantellum*) *fragilis* MacAndrew, Ann. Mag. Nat. Hist. (4) VI, p. 450.
1872. *Lima fragilis* Sowerby in Reeve, Conch. Icon., XVIII, *Lima*, pl. IV, figs. 18*a*, *b*.
1874. *Radula* (*Mantellum*) *fragilis* Dunker, Cat. Mus. Godeffroy, V, p. 177.
1881. *Mantellum fragilis* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 4.
1884. *Lima* (*Mantellum*) *fragilis* Smith, Rep. Voy. "Alert", p. 116.
1886. *Lima fragilis* Cooke, Ann. Mag. Nat. Hist. (5) XVII, p. 136.
1887. *Lima* (*Mantellum*) *fragilis* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 202.
1890. *Lima* (*Ctenoides*) *fragilis* Paetel, Cat. Conch. Samm., III, p. 237.
1891. *Lima fragilis* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 210.
1896. *Lima* (*Ctenoides*) *fragilis* Casto de Elera, Cat. Sist. Filip., p. 811.
1899. *Lima* (*Ctenoides*) *fragilis* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXV, p. 182.
1899. *Lima fragilis* Hedley, Mem. Austral. Mus., III, pp. 493, 528.
1903. *Lima fragilis* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 621.
1905. *Lima fragilis* Hidalgo, Cat. Filip., p. 381.
1906. *Lima fragilis* Melvill & Standen, Proc. Zool. Soc. London, p. 812.
1906. *Radula* (*Ctenoides*) *fragilis* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 309.

1906. *Lima* (*Ctenoides*) *fragilis* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 288.
1906. *Lima* (*Mantellum*?) *fragilis* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 158.
1909. *Lima fragilis* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 128.
1911. *Lima fragilis* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 33—35, pl. X, figs. 1, 3, 9.
1917. *Lima fragilis* Odhner, Kungl. Sv. Akad. Handl., LII (N⁰ 16), p. 13.
1919. *Lima* (*Mantellum*) *fragilis* Thiele, in Martini-Chemn. Conch-Cab., (N. F.), VII (2a), *Limidae*, p. 34, pl. I, fig. 2; pl. VI, fig. 4.
1928. *Lima fragilis* Faustino, Summary Philippine Mar. Freshw. Moll., p. 37.
1929. *Lima* (*Mantellum*) *fragilis* Dautzenberg, Faun. Colon. Francais., III, p. 560.
1930. *Lima* (*Mantellum*) *fragilis* Thiele, Faun. Südwest Austral., V, p. 591.

This interesting species is distinguished by its rather thin, translucent, not very convex and somewhat elongated oval shell, which bears hollow, thread-like ridges running up to the margin and making it slightly dentate.

In addition to the synonymy given above, Von Martens and following him Lynge and Thiele have suggested that *Lima linguatula* Lamarck [1]) from Van Diemens' Land is only a synonym of this species. A shell labelled as *L. linguatula* in the British Museum (Nat. Hist.), London, is certainly nothing more than a typical shell of *L. fragilis*.

Distribution: — *L.* (*L.*) *fragilis* is represented by shells obtained at Anchorage off Pulu Sarassa, Postillon Islands (St. 43), Bay of Bima (St. 47), Bay of Badjo, west of Flores (St. 50), Bank between the islands of Bahuluwang and Tambolungan, South of Saleyer (St. 66), Macassar (St. 71), Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago (St. 93), St. 98 (6° 9′ N., 120° 21′ E.), Anchorage north of Damar Island (St. 144), St. 164 (1° 42′.5 S., 130° 47′.5 E., depth 32 metres), Waru Bay, North coast of Ceram (St. 174), Sanana Bay, east of Sula Besi (St. 193), Anchorage off the South point of Kabaëna Island (St. 209), Saleyer Anchorage (St. 213), St. 225 (5700 Metres North, 279° E. from South Point of South Lucipara Island), Ambon Anchorage (St. 231), Anchorage off Pulu Jedan, East Coast of Aru Islands (St. 273), Mid-Channel in Solor Strait (St. 305) and St. 306 (8° 27′ S., 122° 54′.5 E.).

6. *Lima* (*Limaria*) *orientalis* Adams & Reeve. (Plate III, figs. 32, 33).

1850. *Lima orientalis* Adams & Reeve, "Samarang" Mollusca, p. 75, pl. XXI, fig. 7.
1858. *Radula* (*Mantellum*) *orientalis* Adams, H. & A., Gen. Rec. Moll., II, p. 558.
1860. *Lima orientalis* Reeve, Elem. Conch., II, p. 60.
1871. *Radula* (*Mantellum*) *orientalis* Angas, Proc. Zool. Soc. London, p. 101.
1885. *Lima angulata* Smith (ex parte), "Challenger" Lamellibranchia, p. 289.
1909. *Lima* (*Mantellum*) *angulata* Lynge, D. Kgl. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 159.
1913. *Lima* (*Mantellum*) *angulata* Suter (nec Sowerby), Man. New Zealand Moll. p. 885.
1915. *Lima* (*Mantellum*) *angulata* Suter, (nec Sowerby), Man. New Zealand Moll. Atlas, Pl. LXIII, fig. 4.
1919. *Lima* (*Mantellum*) *angulata* Thiele (ex parte) in Martini-Chemn. Conch.-Cab. (N. F.), VII (2*a*), *Limidae* p. 29.

After a careful examination of the available material I have no doubt that Smith was wrong in considering the Philippine species *L.* (*L.*) *orientalis* of Adams and Reeve as a synonym of the Panaman *L. angulata* Sowerby. The shell of *L.* (*L.*) *orientalis* is comparatively much narrower, more elongated and more oblique; its almost straight anterior margin descends obliquely; the posterior margin is distinctly arched about the middle, but not so angulated as in *L. angulata*; the sculpture consists of moderately raised, inequidistant, radiate, thread-like ribs; the ribs are much more prominent and distinct but less numerous than on the shells of *L. angulata* [1]). The hinge-line is comparatively broader than that of *L. angulata*, but has a shorter though deeper cartilagenous pit. I give below the comparative measurements (in millimetres) and figure shells of the two species on pl. III.

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[1]) Lamarck, J. B. — Anim. sans Vertèb., VI, p. 157 (1819).

	L. orientalis	*L. angulata*
Length.	22.8	32.2
Height	34	30
Diameter.	16	16.2

Probably most of the records of *L. angulata* by different authors from round Australia are to be referred to this species. In the absence of the specimens I am unable to decide which species from Madras was recorded by MELVILL & STANDEN [2]) under the name *L. angulata*.

Distribution: — *L.* (*L.*) *orientalis* appears to be confined to the Southern Pacific area, round the Philippines, Australia, New Zealand, and its range probably extends through the South China Sea into the Gulf of Siam.

The "Siboga" Expedition obtained a single shell at Elat, West coast of Great Kei Island in the Banda Sea (St. 261).

7. *Lima* (*Limaria*) *fenestrata* sp. nov. (Plate III, fig. 36).

1911. *Lima fenestrata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 34, pl. X, fig. 10 (without description).

The available material of this new and interesting species is unfortunately limited to a single shell of which the right valve is badly broken. As the species is, however, so distinct from any previously described form and has been referred under the name *Lima fenestrata* in the Anatomical part of the Report on the "Siboga" Lamellibranchia, I have thought it best to describe the species.

The following is a description of this new species: — Shell small, very thin, translucent, subovoidal, moderately inflated, very inequilateral and oblique; anterior slope rather short, subtruncate, running gradually into the somewhat curved ventral margin; posterior slope nearly straight, much longer than the anterior slope; auricles narrow, subequal; hinge-area very narrow with a shallow, subcentral ligamental pit; sculpture consisting of 14 low but distinctly raised, thread-like, hollow, radial ridges separated by very broad interspaces; with a lens it is also possible to distinguish fine, wavy, concentric threads; these are more prominent in the regions marking off the growth rings; shell margin subdentate, colour pale white; inner surface dull yellowish white. Length of single valve 13.6 mm., height 19.9 mm.; diameter 3 mm.

Habitat: — The unique Holotype was dredged from a depth of 538 metres at St. 316 (7° 19′.4 S., 116° 49′.5 E.) in Bali Sea.

Remarks: — *L.* (*L.*) *fenestrata* appears to be allied to *L.* (*L.*) *fragilis*, but the shell of this new species is much thinner, and more fragile; the sculpture and form also are very characteristic.

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1) I figure a shell (Plate III, figs. 34, 35) of *Lima angulata* Sowerby from Panama, for comparison.

2) MELVILL, J. C. & STANDEN, R. — Journ. Conch., IX, p. 80 (1898).

8. *Lima* (*Acesta*) *celebensis* Bartsch. (Plate IV, figs. 1—6).

1911. *Lima Weberi* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 33—35 (nomen nudum).
1913. *Lima* (*Acesta*) *celebensis* Bartsch, Proc. U. S. Nat. Mus. XLV, p. 240, pls. XVIII, XIX.
1919. *Lima* (*Acesta*) *celebensis* Thiele, Martini-Chemn. Conch.-Cab. (N. F.), VII (2*a*), *Limidae*, p. 25, pl. VIII, fig. 4.

A number of specimens of varying sizes from the localities noted below and labelled *L. weberi* in the "Siboga" collection fully agree with BARTSCH's description of *L.* (*A.*) *celebensis*. The name *L. weberi* has to be regarded only as a nomen nudum, as the species was never described under this name.

Measurements (in millimetres).

Length	14.5	25.5	44.2	110
Height.	17.8	31.6	55	156
Diameter	3.2	5.6	10	52

The first three measurements are of single valves only.

Distribution: — BARTSCH's specimens of *L.* (*A.*) *celebensis* were dredged from a depth of 950 metres in Buton Strait to the south east of Celebes.

The "Siboga" specimens were collected at St. 45 (7° 24′ S., 118° 15′.2 E.; depth 794 metres), St. 259 (5° 29′.2 S., 132° 52′.5 E.; depth 487 metres); St. 314 (7° 36′ S., 117° 30′.8 E.; depth 694 metres) and St. 316 (7° 19′.4 S., 116° 49′.5 E.; depth 538 metres).

9. *Lima* (*Acesta*) *rathbuni* Bartsch.

1911. *Lima crocea* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 33, 34 (nomen nudum).
1913. *Lima* (*Callolima*) *Rathbuni* Bartsch, Proc. U. S. Nat. Mus. XLV, p. 237, pls. XVI, XVII.
1918. *Lima* (*Acesta*) *rathbuni* Thiele in Martini-Chemn. Conch.-Cab. (N. F.), VII (2*a*), *Limidae*, p. 23, pl. VI, fig. 1, pl. VIII, fig. 1.

In the Anatomical part of the Report on the "Siboga" Lamellibranchia by PELSENEER this species was referred under the name *Lima crocea*, but in view of BARTSCH's description of the species under the name *Lima* (*Callolima*) *rathbuni* this name has now to be regarded as a nomen nudum. BARTSCH's elaborate description of the species fully agrees with the single adult shell collected by the "Siboga" Expedition. A young shell, which was dredged not far off from the adult shell referred to above, also appears to belong to this species.

The young shell is almost transparent, but shows the beginning of the deposition of the characteristic yellow pigment in the shell. The irregular radial ridges are also better marked on the small shell.

Measurements (in millimetres).

Length	119	16.5
Height	156	20.8
Diameter	51	7.9

Distribution: — The types of the species were obtained near the Phillippine Islands at depths of 300—400 metres (6°—13° N., 120°—124° E.). The "Siboga" specimens were dredged at St. 254 (5° 40′ S., 132° 26′ E.; 310 metres) and St. 256 (5° 26′.6 S., 132° 32′.5 E.; 397 metres) near the Kei Islands group.

10. *Lima* (*Limatula*) *leptocarya* Melvill. (Plate IV, figs. 7, 8).

1898. *Lima* (*Limatula*) *leptocarya* Melvill, Mem. Manchester Soc. XLII, p. 28, pl. II, fig. 2.
1906. *Lima* (*Limatula*) *leptocarya* Melvill & Standen, Proc. Zool. Soc. London, p. 812, pl. LV, fig. 5.
1920. *Lima* (*Limatula*) *leptocarya* Thiele, in Martini-Chemn. Conch.-Cab. (N. F.), VII (2 *a*), *Limidae*, p. 49, pl. IX, fig. 18.

I have compared the "Siboga" specimens, which I assign to *L.* (*L.*) *leptocarya*, with the type of the species in the British Museum (Nat. Hist.), London, and can find no difference, except that the "Siboga" specimens are about twice the size of the type. The measurements of the largest of the "Siboga" specimens are: — length 9.4 mm.; height 14.9 mm.; thickness (single valve) 4.5 mm. I figure a shell from the Persian Gulf.

Distribution: — The type of the species came from a depth of 10 fathoms at Muscat in the Persian Gulf, but later other specimens were obtained in the Gulf of Oman at 60 fathoms.

The "Siboga" material, consisting of odd valves, was collected at Sailus Ketjil, Paternoster Islands (St. 37), Western entrance, Samau Strait (St. 59), Kambaragi Bay, Tanah Djampeah (Stat. 64), Muaras Reef, inner side, east coast of Borneo (St. 91) and St. 98 (6° 9′ N., 120° 21′ E., 350 metres).

11. *Lima* (*Limatula*) *sibogai* sp. nov. (Plate IV, figs. 9, 10 and Plate VIII, figs. 13, 14).

I have not been able to refer a number of specimens of the subgenus *Limatula* dredged from a depth of 1886 metres from near Celebes to any previously described species, and believe that it is new to science. The following is a description of this new species: —

Species of a medium size, thin-shelled, translucent, greatly inflated, somewhat compressed from side to side and having a median ridge running from the umbones to the posterior margin; elongated-ovoid, somewhat asymmetrical as the anterior half is more convex than the posterior; upper angles distinct, marking off the narrow, subequal auricles; umbones subcentral, distant, pointed, incurved; hinge-area comparatively narrow with a centrally situated triangular ligamental pit; sculpture consisting of numerous low, thread-like radial ribs; the latter are not so deeply impressed but produce by intercrossing with the radial ones a regular reticulated sculptured surface; ventral margin sharp; colour creamy white, inner surface shining.

Measurements (in millimetres)

Length	8.2
Height	12.7
Thickness.	7.5

Habitat: — *L.* (*L.*) *sibogai* was, as noted above, dredged from a depth of 1886 metres at St. 208 (5° 39′ S., 122° 12′ E.).

Remarks: — This new species appears to be allied to *L.* (*L.*) *simillima* Thiele[1]), but is distinguished by its more arched and inflated shell, broader hinge-area, more pointed umbones and sculpture.

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[1]) Thiele, J. — in Martini-Chemn. Conch.-Cab. (N. F.), VIII (2 *a*), *Limidae*, p. 54, pl. X, fig. 1 (1920).

Family Ostreidae.

Genus **Ostrea** Linnaeus.

1758. *Ostrea* Linnaeus, Syst. Nat., (ed. X), p. 696.

In the "Siboga" collection there are no representatives of the genus *Ostrea* s.s., of which *Ostrea edulis* (Linn.) was designated by Children [1]) as the type.

A number of very young shells from various stations may possibly belong to one or other of the species of this genus, but they can not be referred with certainty to any species.

Subgenus **Lopha** Röding.

1798. *Lopha* Röding, Mus. Boltenianum, p. 168.
1807. *Alectryonia* Fischer de Waldheim, Mus. Demidoff, III, p. 269.
1840. *Dendostrea* Swainson, Treat. Malacol., p. 389.
1886. *Alectryonia* Fischer, Man. Conchyliol., p. 926.
1895. *Lopha* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 672.
1925. *Lopha* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 59.
1925. *Lopha* Oostingh, Geol. Comm. Agr. Univ. Wageningen, n^0. 9, p. 250.
1929. *Lopha* Dautzenberg, Faun. Colon. Francaise, III, p. 556.

This subgenus of *Ostrea* is easily distinguished by the shell valves being subequal in size and bearing deep radial folds. Dall selected *O.* (*L.*) *crista-galli* (Linn.) as the type of the subgenus *Lopha*.

1. *Ostrea* (*Lopha*) *hyotis* (Linn.).

1742. *Ostreum structura peculiari* Gualtieri, Ind. Test., pl. CIII, figs. C, C.
1757. *Rastellum* D'Argenville, La Conch., Appendix, p. 393. pl. III, fig. F.
1758. *Mytilus Hyotis* Linnaeus, Syst. Nat., (ed. X), p. 704.
1764. *Mytilus Hyotis* Linnaeus, Mus. Lud. Ulr., p. 538.
1764. *Huitre pierreme difforme* Knorr, Delices Yeux, I, p. 49, pl. XXIX, fig. 1.
1767. *Mytilus Hyotis* Linnaeus, Syst. Nat., (ed. XII), p. 1155.
1780. *Mytilus Hyotis* Born, Test. Mus. Caes. Vindobon., p. 122.
1780. *Huitre* Favanne, Conch., pl. XLV, fig. G.
1785. *Ostrea Hyotis* etc. Chemnitz, Conch.-Cab., VIII, p. 58, pl. LXXV, fig. 685.
1788. *Ostrea hyotis* Schröter, Conch.-Cab. Namen Reg., p. 76.
1790. *Mytilus Hyotis* Gmelin, Syst. Nat., (ed. XIII), p. 3350.
1797. *Ostrea Gigas* Humphrey (non Thunberg), Mus. Calonnianum, p. 53.
1802. *Mytilus hyotis* Bosc, Hist. Nat. Coq., III, p. 159.
1817. *Mytilus hyotis* Dillwyn, Descr. Cat., I, p. 300.
1819. *Ostrea hyotis* Lamarck, Anim. sans Vertèb.. VI, p. 213.
1821. *Ostrea hyotis* Blainville, Dict. Sci. Nat., XXII, p. 19.
1824. *Ostrea hyotis* Dubois, Epitome, p. 127.
1825. *Ostrea Hyotis* Sowerby, Cat. Tankerville, p. 27.
1831. *Ostrea hyotis* Deshayes, Encyclopéd. Méthod., II, p. 298.
1836. *Ostrea hyotis* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 235.
1845. *Ostrea hyotis* Catlow & Reeve, Conch. Nomencl., p. 86.
1855. *Ostrea hyotis* Berge, Conchylienbuch, p. 92.
1855. *Mytilus hyotis* Hanley, Ipsa Linn. Conch., p. 136.

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1) Children, J. G. — Quart. Journ. Sci. Lit. Arts, XV, p. 44, pl. III, fig. 90 (1823).

1856. *Mytilus* (*Ostrea*) *hyotis* Hanley in Wood, Ind. Test., p. 66, pl. XII, fig. 2.
1856. *Ostrea Hyotis* Hanley, Rec. Biv. Shells, p. 308.
1858. *Ostrea* (*Alectryonia*) *hyotis* Adams, H. & A., Gen. Rec. Moll., II, p. 569.
1860. *Ostrea hyotis* Reeve, Elem. Conch., II, p. 52.
1869. *Ostrea* (*Lopha*) *hyotis* Dunker, Cat. Mus. Godeffroy, IV, p. 116.
1869. *Lopha hyotis* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 888.
1870. *Ostraea hyotis* Sowerby in Reeve, Conch. Icon., XVIII, *Ostraea*, pl. IV, fig. 7.
1871. *Ostraea nobilis* Sowerby, op. cit., pl. XXXII, fig. 81.
1877. *Ostrea hyotis* de Man, Rech. Faun. Madagascar, V (3), Moll., p. 10.
1880. *Ostrea* (*Alectryonia*) *hyotis* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell, p. 312.
1882. *Lopha hyotis* de Rochebrune, Bull. Soc. Philomat. Paris, (7), VI, p. 99.
1884. *Ostrea hyotis* Grasset, Ind. Test. Viv., p. 313.
1890. *Ostrea* (*Lopha*) *hyotis* Paetel, Cat. Conch. Samm., III, p. 247.
1891. *Ostrea hyotis* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 207.
1895. *Ostrea hyotis* Pilsbry, Cat. Mar. Moll. Japan, p. 146.
1896. *Alectryonia hyotis* Casto de Elera, Cat. Sist. Filip., p. 816.
1902. *Ostrea hyotis* Shopland, Proc. Malacol. Soc. London, V, p. 179.
1905. *Ostrea hyotis* Hidalgo, Cat. Filip., p. 387.
1906. *Ostrea hyotis* Owston, Japan. Loochooan Shells, p. 34.
1906. *Ostrea* (*Lopha*) *hyotis* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 288.
1909. *Ostrea hyotis* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 161.
1909. *Ostrea hyotis* Melvill, Trans. Linn. Soc. London (Zool.), XII, p. 125.
1913—15. *Ostrea hyotis* Suter, Man. New Zealand Moll., p. 889, pl. LVII, fig. 2.
1917. *Ostrea hyotis* Odhner, Kungl. Sv. Akad. Handl., LII, n⁰. 16, p. 7.
1919. *Ostrea hyotis* Odhner, Arkiv. Zool, XII, n⁰. 6, p. 5.
1924. *Ostrea hyotis* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXX, p. 317.
1925. *Ostrea hyotis* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXXI, p. 256.
1927. *Ostrea hyotis* (ex parte), Cox, Rept. Palaeontol. Zanzibar, p. 35.
1928. *Ostrea hyotis* Faustino, Summary Philippine Mar. Freshw. Moll., p. 28.
1929. *Ostrea* (*Lopha*) *hyotis* Dautzenberg, Faun. Colon. Francais., III, p. 557.
1929. *Ostrea hyotis* Lamy, Journ. Conchyliol., LXXIII, p. 233.
1930. *Ostrea hyotis* Cox, Mon. Geol. Dept. Hunterian Mus. Glasgow Univ., N⁰. 4, p. 109.

Cox in his paper on the Palaeontology of Zanzibar (1927) has discussed *O.* (*L.*) *hyotis* in detail, and given references to the various records of the species as a fossil. He noted that the shell of this species is "fairly thin" but this is not always the case. Old shells of this species often have, for their size, a remarkably thick shell, and the tubuliferous spines on the ridges are also absent. It is quite possible that *O. virleti* Deshayes [1]) is only a form of this species.

As von Martens had suggested, *O. nobilis* Sowerby [2]) from the Mauritius is also a synonym of this species.

Distribution: — *O.* (*L.*) *hyotis* has a wide distribution in the Red Sea, the Indian Ocean and the Western Pacific.

In the "Siboga" collection it is represented by a very fine clump of 3 shells collected from a reef in Madura Bay, Molo Strait (St. 51).

2. *Ostrea* (*Lopha*) *hyotis* var. *imbricata* Lam.

1819. *Ostrea imbricata* Lamarck, (non Gmelin) Anim. sans Vertèb., VI, p. 213.
1821. *Ostrea imbricata* Blainville, Dict. Sci. Nat., XXII, p. 20.
1825. *Ostrea imbricata* Dubois, Epitome, p. 127.

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[1]) See Cox, L. R. — Proc. Malacol. Soc. London, XVIII, p. 177 (1929).

[2]) Sowerby, G. B. — in Reeve, Conch. Icon., XVIII, *Ostraea*, pl. XXXII, fig. LXXXI (1871).

1825. *Ostrea imbricata* Sowerby, Cat. Tankerville, p. 27.
1825. *Ostrea imbricata* Blainville, Man. Malacol., p. 521.
1831. *Ostrea imbricata* Deshayes, Encyclopéd. Méthod., II, p. 293.
1836. *Ostrea imbricata* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 235.
1845. *Ostrea imbricata* Catlow & Reeve, Conch. Nomencl., p. 86.
1853. *Lopha imbricata* Mörch, Cat. Yoldi, II, p. 61.
1855. *Ostrea imbricata* Berge, Conchylienbuch, p. 92.
1856. *Ostrea imbricata* Hanley, Rec. Biv. Shells, p. 309.
1858. *Ostrea* (*Alectryonia*) *imbricata* Adams, H. & A., Gen. Rec. Moll., II, p. 569.
1860. *Ostrea imbricata* Reeve, Elem. Conch., II, p. 52.
1871. *Ostrea imbricata* and *O. inermis* Sowerby in Reeve, Conch. Icon., XVIII, pl. XVII, figs. 36*a*, *b*, pl. XXVIII, fig. 70.
1882. *Ostrea imbricata* Dunker, Ind. Moll. Mar. Japon., p. 250.
1884. *Ostrea imbricata* Grasset, Ind. Test. Viv., p. 313.
1885. *Ostrea imbricata* Smith, "Challenger" Lamellibranchia, p. 318.
1890. *Ostrea* (*Lopha*) *imbricata* Paetel, Cat. Conch. Samm,, III, p. 247.
1895. *Ostrea imbricata* Pilsbry, Cat. Mar. Moll. Japan, p. 146.
1905. *Ostrea imbricata* Hidalgo, Cat. Filip., p. 387.
1906. *Ostrea imbricata* Owston, Japan. Loochooan Shells, p. 34.
1906. *Ostrea imbricata* Melvill & Standen, Proc. Zool. Soc, London, p. 807.
1909. *Ostrea hyotis* var. *imbricata* Lynge. D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V. p. 161.
1910. *Ostrea imbricata* Hedley, Austral. Ass. Adv. Sci., XII, p. 345.
1911. *Ostrea imbricata* Pelseneer "Siboga" Lamellibranches (Anat.), p. 27, pl. IX, figs. 8, 9.
1917. *Ostrea imbricata* Odhner, Kungl. Sv. Akad. Handl., LII, no. 16, pp. 7, 13.
1924. *Ostrea imbricata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXX, p. 317.
1928. *Ostrea imbricata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 28.
1929. *Ostrea imbricata* Dautzenberg, Faun. Colon. Francais., III, p. 554.
1929. *Ostrea* (*Lopha*) *imbricata* Dautzenberg, op. cit., p. 557.
1929. *Ostrea hyotis* var. *imbricata* Lamy, Journ. Conchyliol., LXXIII, p. 234.

Cox includes *Ostrea imbricata* Lamarck in the synonymy of *O.* (*L.*) *hyotis*, as had also been suggested by DESHAYES and several of the earlier workers. DUNKER, REEVE, PILSBRY, LYNGE, MELVILL, DAUTZENBERG consider it as quite distinct. I have carefully examined the available material, and am of opinion that it can be distinguished as a distinct variety.

The shell of the var. *imbricata* is usually thinner, the plications of the valves more numerous and angulate and the hinge-line more extensive.

Distribution: — *O.* (*L.*) *hyotis* var. *imbricata* has been recorded from Japan, China, New Guinea, Java, Mekran Coast and the Persian Gulf.

In the "Siboga" collection this variety is represented by a single adult specimen collected from the Ambon Reef.

3. *Ostrea* (*Lopha*) *crista galli* (Linn.).

1685. Lister, Hist. Conch., pl. CXCVIII.
1741. *Ostreum plicatum minus* Rumph, Amboin. Rarit., p. 156, pl. XLVII, fig. D.
1742. *Ostreum structura peculiari depressum* etc. and *striatum* etc. Gualtieri, Ind. Test., pl. CIV, figs. C, C, E.
1757. *Ostreum plicatum* etc. D'Argenville, La Conch., pp. 273, 279, pl. XXIII, fig. D.
1758. *Mytilus Crista galli* Linnaeus, Syst. Nat., (ed. X), p. 704.
1764. *Mytilus Crista galli* Linnaeus, Mus. Lud. Ulr., p. 537.
1767. *Mytilus Crista galli* Linnaeus, Syst. Nat., (ed. XII), p. 1155.

1770. *Double Crète du Coq* etc. Knorr, Delices Yeux, IV, pp. 19, 20, pl. X, figs. 3—5.
1771. *Crète du Coq* etc. Knorr, op. cit., V, p. 27, pl. XVI, fig. 1, pl. XVII, figs. 1—3.
1780. *Mytilus Crista galli* Born, Test. Mus. Caes. Vindobon., p. 122.
1785. *Auris Porri, Apex Galli* etc. Chemnitz, Conch.-Cab., VIII, p. 52, pl. LXXV, figs. 683, 684.
1786. *Ostrea Crista-galli* Chemnitz, op. cit., IX, p. 150, pl. CXVI, fig. 998.
1788. *Mytilus Cristagalli* Barbut, Gen. Verm., p. 65, pl. XI, figs. 1, 2.
1797. *Ostrea Crista Galli* Humphrey, Mus. Calonnianum, p. 53.
1798. *Lopha crista Galli* Röding, Mus. Boltenianum, p. 168.
1802. *Mytilus crista galli* Bosc, Hist. Nat. Coq., III, p. 159.
1807. *Mytilus crista-galli* Maton & Rackett, Trans. Linn. Soc. London, VIII, p. 104.
1817. *Mytilus crista galli* Dillwyn, Descr. Cat., I, p. 299.
1817. *Ostrea crista galli* Schumacher, Essai Nouv. Syst., p. 109.
1819. *Ostrea crista-galli* Lamarck, Anim. sans Vertèb., VI, p. 213.
1821. *Ostrea crista-galli* Blainville, Dict. Sci. Nat., XXII, p. 19, pl. LXXXV, fig. 2.
1825. *Ostrea cristagalli* Dubois, Epitome, p. 127.
1825. *Ostrea Crista-Galli* Sowerby, Cat. Tankerville, p. 27.
1825. *Huitre crète du Coq* Blainville, Man. Malacol., pl. LX, fig. 2.
1830. *Ostrea Crista-galli* Sowerby, Gen. Shells, II, fig. 2.
1831. *Ostrea crista galli* Deshayes, Encyclopéd. Méthod., II, p. 298.
1834. *Ostrea crista-galli* Griffith & Pidgeon, Cuvier, Anim. Kingdom, p. 599, pl. XXXIX, fig. 1.
1836. *Ostrea crista-galli* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 234.
1840. *Ostrea* (*Dendostrea*) *crista-galli* Swainson, Treat. Malacol., p. 389.
1841. *Ostrea crista galli* Reeve, Conch. Syst., I, p. 169, pl. CXXI, fig. 2.
1844. *Ostrea crista galli* Potiez & Michaud, Gal. Douai, II, p. 47.
1845. *Ostrea crista-galli* Catlow & Reeve, Conch. Nomencl., p. 85.
1847. *Mya cristagalli* Gray, Proc. Zool. Soc. London, p. 201.
1847. *Ostrea Cristagalli* Chenu, Illustr. Conchyliol., pl. III, figs. 2, 2*a*.
1853. *Lopha crista galli* Mörch, Cat. Yoldi, II, p. 61.
1855. *Ostrea crista-galli* Berge, Conchylienbuch, p. 91, pl. XIII, fig. 7.
1855. *Mytilus crista-galli* Hanley, Ipsa Linn. Conch., p. 136.
1856. *Ostrea Crista-galli* Hanley, Rec. Biv. Shells, p. 308.
1856. *Mytilus* (*Ostrea*) *crista-galli* Hanley in Wood, Ind. Test., p. 66, pl. XII, fig. 1.
1858. *Ostrea* (*Alectryonia*) *crista-galli* Adams, H. &. A., Gen. Rec. Moll., II, p. 569.
1860. *Ostrea crista-galli* Reeve, Elem. Conch., II, p. 51.
1862. *Alectryonia crista-galli* Chenu, Man. Conchyliol., II, p. 197, fig. 999.
1871. *Ostraea crista-galli* Sowerby in Reeve, Conch. Icon., XVIII, *Ostraea*, pl. XI, figs. 22*a*—*c*.
1874. *Ostrea* (*Lopha*) *crista-galli* Dunker, Cat. Mus. Godeffroy, V, p. 178.
1878. *Ostrea crista-galli* Kobelt, Illustr. Conchylienbuch, p. 377, pl. CXII, fig. 2.
1880. *Ostrea* (*Alectryonia*) *crista-galli* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 312.
1884. *Ostrea cristagalli* Grasset, Ind. Test. Viv., p. 313.
1886. *Ostrea* (*Alectryonia*) *crista galli* Fischer, P., Man. Conchyliol., p. 926.
1890. *Ostrea* (*Lopha*) *crista-galli*, Paetel, Cat. Conch. Samm., III, p. 246.
1890. ? *Ostrea crista-galli* Smith, Proc. Zool. Soc. London, p. 435.
1893. *Ostrea* (*Alectryonia*) *crista-galli* Dautzenberg, Bull. Soc. Zool. France, XVIII, p. 84.
1895. *Ostraea cristagalli* Pilsbry, Mar. Mol. Japan, p. 184.
1896. *Alectryonia crista-galli* Casto de Elera, Cat. Sist. Filip., p. 816.
1898. *Ostrea* (*Alectryonia*) *townsendi* Melvill, Mem. Manchester Soc., XLII, n°. 4, p. 27, pl. II, fig. 14.
1899. *Ostrea cristagalli* Hedley, Mem. Austral. Mus., III, pp. 495, 528.
1902. *Ostrea crista-galli* Shopland, Proc. Malacol. Soc. London. V, p. 179.
1905. *Ostrea Cristagalli* Hidalgo, Cat. Filip., p. 386.
1906. *Ostrea cristagalli* Owston, Japan. Loochooan Shells, p. 34.
1906. *Ostrea* (*Lopha*) *crista-galli* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 288.
1906. *Ostrea* (*Alectryonia*) *townsendi* Melvill & Standen, Proc. Zool. Soc. London, p. 807.
1909. *Ostrea* (*Alectryonia*) *crista-galli* Lamy, Mém. Soc. Zool. France, XXII, p. 341.

1909. *Ostrea* (*Alectryonia*) *crista-galli* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 126.
1910. *Ostrea cristagalli* Hedley, Austral. Ass. Adv. Sci., XII, p. 345.
1911. *Ostrea cristagalli* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 27.
1924. *Ostrea crista-galli* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXX, p. 317.
1925. *Ostrea crista-galli* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXXI, p. 256.
1928. *Ostrea crista-galli* Faustino, Summary Philippine Mar. Freshw. Moll. p. 28.
1929. *Ostrea crista-galli* Cox, Proc. Malacol. Soc. London, XVIII, p. 181.
1929. *Ostrea* (*Lopha*) *crista galli* Dautzenberg, Faun. Colon. Francais., III, p. 556.
1929. *Ostrea cristagalli* Lamy, Journ. Conchyliol., LXXIII, p. 254.
1930. *Ostrea cristagalli* and *O. townshendi* (sic) Cox, Mon. Geol. Dept. Hunterian Mus. Glasgow Univ., N⁰. 4, p. 128, pl. XIV, fig. 27.

O. (*L.*) *crista galli* is a very characteristic species, and is easily distinguished from the other allied forms. From an examination of several specimens of *O. townsendi* Melvill from the Persian Gulf, I have no doubt that this species is synonymous with *O.* (*L.*) *crista galli.*

Distribution: — *O.* (*L.*) *crista galli* is widely distributed in the Indo-Pacific, the Persian Gulf and the Red Sea. SMITH's record of the species from St. Helena is, as the author remarked, based on JEFFREY's record of the species from that area, and is open to doubt.

The "Siboga" Expedition collected a single young shell of this species at Banda Anchorage (St. 240).

Family PINNIDAE.

Genus **Pinna** Linn.

1758. *Pinna* Linnaeus, Syst. Nat., (ed. X), p. 707.
1895. *Pinna* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 659.
1925. *Pinna* Woodring, Miocene Mollusks from Bowden, Jamaica, *Pelecypods* etc., p. 56.
1929. *Pinna* Winckworth, Proc. Malacol. Soc. London, XVIII, pp. 276—283.
1930. *Pinna* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 132.

For a detailed discussion of the characters and classification of the Genus *Pinna* reference may be made to WINCKWORTH's valuable contribution cited above. Good accounts of the subgenera are also to be found in WOODRING's paper.

The type of the genus *Pinna* and subgenus *Pinna s. s.* is *Pinna rudis* Linn.

In the "Siboga" collection the genus is represented by all the three subgenera, *Pinna s. s.*, *Atrina* Gray and *Streptopinna* von Martens.

1. *Pinna* (*Pinna*) *atropurpurea* Sowerby.

1825. *Pinna atropurpurea* Sowerby, Cat. Tankerville, Appendix, p. 5.
1843. *Pinna atropurpurea* Hanley, Rec. Biv. Shells, p. 225.
1846. *Pinna atropurpurea* Hanley, Rec. Biv. Shells, pl. XXIV, fig. 36.
1852. *Pinna trigonum* Dunker, Zeitschr. Malakozool., IX, p. 60.
1858. *Pinna Philippinensis*, *P. electrina*, *P. Zebuensis*, *P. fumata*, ? *P. madida*, *P. mutica*, *P. euglypta*, *P. atropurpurea*, *P. vespertina*, ? *P. virgata* (non Menke), *P. augustana* and *P. regia* Reeve, Conch. Icon., XI, *Pinna*, pl. XI, fig. 20; pl. XIV, figs. 25, 26; pl. XV, fig. 27; pl. XVII, fig. 31; pl. XVIII, fig. 34; pl. XX, fig. 37; pl. XXII, fig. 41; pl. XXIII, fig. 44; pl. XXIV, fig. 45; pl. XXVII, fig. 51; pl. XXX, fig. 56.
1858. *Pinna regia* Hanley, Proc. Zool. Soc. London, p. 227.

1860. *Pinna augustana, P. atropurpurea, P. electrina, P. euglypta, P. fumata, P. madida, P. Menkei, P. mutica, P. Philippinensis, P. regia, P. vespertina, P. virgata* and *P. Zebuensis* Reeve, Elem. Conch., II, p. 69.

1866. *Pinna augustana, P. fumata, P. virgata, P. Philippinensis, P. atropurpurea, P. regia, P. vespertina, P. Menkei, P. euglypta* and *P. Zebuensis* von Martens[1]), Ann. Mag. Nat. Hist., (3) XVII, p. 87.

1880. *Pinna aequilatera* von Martens (nec Weinkauff), Möbius Beiträge Meeresf. Mauritius, Seychell., p. 317, pl. XXII, fig. 4.

1889. *Pinna menkei* Whitelegge, Journ. Roy. Soc. N. S. Wales, XXIII, p. 244.

1890. *Pinna atropurpurea, P. electrina, P. euglypta, P. fumata, P. madida, P. Menkei, P. mutica, P. Philippinarum, P. regia, P. vespertina, P. virgata* and *P. Zebuensis* Paetel, Cat. Conch. Samm. III, pp. 208—210.

1890. *Pinna fumata, P. euglypta, P. mutica, P. Menkei, P. madida, P. atropurpurea, P. Zebuensis* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (I), *Malleacea.* p. 54, pl. XXII, fig. 1; p. 55, pl. XXV, fig. 1; p. 68, pl. XXVI, fig. 2; p. 68, pl. XXVI, fig. 1; p. 70, pl. XXV, fig. 2; p. 71, pl. XXVII, fig. 2; p. 72, pl. XXIII, fig. 2.

1891. *Pinna electrina, P. Philippinensis, P. Molluccensis, P. atrata, P. vespertina, P. regia, P. virgata* (Clessin non Menke) Clessin, op. cit., p. 75, pl. XXIX, fig. 2; p. 79, pl. XXXII, fig. 1; p. 82, pl. XXXIII, fig. 1; p. 83, pl. XXXII, fig. 2; p. 90, pl. XXXIX, fig. 2; p. 91, pl. XL, fig. 1; p. 100, pl. XLV, fig. 1.

1896. *Pinna fumata* and *P. philippinarum* Casto de Elera, Cat. Sist. Filip., p. 799.

1905. *Pinna electrina, P. fumata, P. mutica* and *P. Philippinensis* Hidalgo, Cat. Filip., p. 370.

1906. *Pinna fumata* and *P. zebuensis* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 290.

1909. *Pinna mutica* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 149.

1911. *Pinna regia* Pelseneer, "Siboga" Lamellibranches (Anat.), pl. IX, fig. 11.

1917. ? *Pinna bicolor* var., Odhner (nec Gmelin), Kungl. Sv. Akad. Handl., LII, N⁰ 16, p. 7.

1924. *Pinna atropurpurea, P. fumata, P. madida, P. menkei* and var. *caviterga* Hedley, Rec. Austral. Mus., XIV, pp. 144—147, pl. XIX, figs. 2, 3, pl. XX, fig. 8.

1929. *Pinna atropurpurea* Winckworth, Proc. Malacol. Soc. London, XVIII, p. 283.

I have nothing to add to WINCKWORTH's recent notes on this species. I have examined the entire material in the British Museum (Nat. Hist.), London, and fully agree with the synonymy as suggested by WINCKWORTH.

Distribution: — *P. atropurpurea* appears to be widely distributed in the Indo-Pacific area; details of its distribution are included in WINCKWORTH's paper cited above.

In the "Siboga" collection the species is represented by a fair series of shells from Saleyer reef (St. 213).

Subgenus **Atrina** Gray.

1847. *Atrina* Gray, Proc. Zool. Soc. London, p. 190.

1895. *Atrina* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 659.

1925. *Atrina* Woodring, Miocene Mollusks from Bowding, Jamaica, Pelecypods, etc., p. 57.

1929. *Atrina* Winckworth, Proc. Malacol. Soc. London, XVIII, p. 283.

As WINCKWORTH has pointed out *Atrina* is distinguished from *Pinna s. s.* by "the absence of a medial groove on the inside of each valve from the anterior extremity to the posterior adductor scar".

GRAY designated *Pinna nigra* Chemnitz as the type of *Atrina*, but this species, as WINCKWORTH has shown, is synonymous with *Pinna* (*Atrina*) *vexillum* Born.

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1) VON MARTENS in this account considered *P. augustana* and *P. fumata* as synonyms of *P. hystrix*, but the latter species is, as is discussed further on, only a synonym of *P. strangei*.

1. *Pinna* (*Atrina*) *vexillum* Born.

1741. *Pinna lata Plinnii* Rumph, Amboin. Rarit., p. 154, pl. XLVI, fig. L.
1742. *Pinna incurvata lata* Gualtieri, Ind. Test., pl. LXXXI, fig. A.
1758. *Perna fusca*, etc. Seba, Thes., III, p. 181, pl. XCI, figs. 2, 2.
1767. *Pinna lata* Petiver, Anim. Amboin., p. 4, pl. XIX, fig. 6.
1767. *Pinna rudis* var. *B.* Linnaeus, Syst. Nat., (ed. XII), p. 1159.
1780. *Pinna vexillum* Born, Test. Mus. Caes. Vindobon., p. 134, pl. VII, fig. 8.
1785. *Pinna nigra, fumigata* etc. Chemnitz, Conch.-Cab., VIII, p. 221, pl. LXXXVIII, fig. 774.
1788. *Pinna nigra* Schröter, Conch.-Cab. Namen Reg., p. 82.
1790. *Pinna rudis* var. *B.* Gmelin, Syst. Nat., (ed. XIII), p. 3363.
1797. *Pinna nigricans* Humphrey, Mus. Calonnianum, p. 42.
1798. *Pinna rudis* and *P. gubernaculum* Röding, Mus. Boltenianum, p. 159.
1817. *Pinna nigra* Dillwyn, Descr. Cat., I, p. 325.
1819. *Pinna nigrina* Lamarck, Anim. sans Vertèb., VI. p. 134.
1825. *Pinna nigrina* Sowerby, Cat. Tankerville, p. 23.
1826. *Pinna nigrina* Blainville, Dict. Sci. Nat., XLI, p. 70.
1832. *Pinna nigrina* Deshayes, Encyclopéd. Méthod., III, p. 770.
1836. *Pinna vexillum* and *P. nigrina* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 66.
1841. *Pinna nigrina* Reeve, Conch. Syst., I, p. 142, pl. CIV.
1843. *Pinna vexillum*, *P. nigra* and *P. adusta* Hanley, Rec. Biv. Shells, p. 254.
1845. *Pinna adusta*, *P. nigrina* and *P. vexillum*, Catlow & Reeve, Conch. Nomencl., pp. 75, 76.
1847. *Pinna* (*Atrina*) *nigra* Gray, Proc. Zool. Soc. London, p. 199.
1853. *Atrina nigra* Mörch, Cat. Yoldi, II, p. 52.
1855. *Pinna rudis* var. *B.* Hanley, Ipsa Linn. Conch., p. 148.
1856. *Pinna nigra* and *P. vexillum* Hanley in Wood, Ind. Test., p. 71, pl. XII, fig. 2 and pl. XIII, fig. 11.
1857. *Pinna* (*Atrina*) *nigra* and *P.* (*A.*) *vexillum* Adams, H. & A., Gen. Rec. Moll., II, p. 530.
1857. *Pinna nigra* and *P. vexillum* Reeve, Conch. Icon., XI, *Pinna*, pl. III, fig. 4, pl. XIX, fig. 36.
1860. *Pinna nigra* and *P. vexillum* Reeve, Elem. Conch., II, p. 69.
1862. *Pinna nigrina* Chenu, Man. Conchyliol., II, pp. 164, 165, fig. 821.
1866. *Pinna adusta*, *P. nigrina* and *P. vexillum* von Martens, Ann. Mag. Nat. Hist., (3) XVII, p. 86.
1867. *Pinna nigra* Mitchell, Cat. Mus. Madras, p. 72.
1869. *Pinna* (*Atrina*) *nigra* Dunker, Cat. Mus. Godeffroy, IV, p. 115.
1874. *Pinna* (*Atrina*) *nigra* Dunker, Cat. Mus. Godeffroy, V, p. 176.
1877. *Pinna nigra* Pagenstecher, Kossmann, Roth. Meer. Mollusk. p. 30.
1877. *Pinna nigrina* de Man, Rech. Faun. Madagascar, V (3) Mollusques, p. 8.
1878. *Pinna* (*Atrina*) *nigra* Kobelt, Illustr. Conchylienbuch, p. 367.
1879. *Pinna nigrina* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 741.
1880. *Pinna* (*Atrina*) *nigrina* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 317.
1881. *Atrina nigra* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 5.
1886. *Pinna* (*Atrina*) *nigra* Fischer, P., Man. Conchyliol., p. 963.
1887. *Pinna* (*Atrina*) *nigrina* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 204.
1890. *Pinna adusta*, *P.* (*Atrina*) *nigra* and *P.* (*A.*) *vexillum* Paetel, Cat. Conch. Samm., III, pp. 208, 210.
1891. *Pinna nigra* and *P. vexillum* Clessin in Martini & Chemn. Conch.-Cab. (N. F.) VIII (1), *Malleacea*, p. 65, pl. XXI, fig. 2 and p. 67, pl. XX, fig. 3.
1891. *Pinna nigra* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 211.
1891. *Pinna nigrina* Smith, Proc. Zool. Soc. London, p. 435.
1895. *Pinna nigrina* Pilsbry, Cat. Mar. Shells Japan, p. 747.
1896. *Pinna* (*Atrina*) *nigrina* Casto de Elera, Cat. Sist. Filip., p. 799.
1899. *Pinna* (*Atrina*) *nigra* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 184.
1901. *Pinna nigra* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXIX, p. 289.
1902. *Pinna nigra* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1903. *Pinna nigra* Smith, Faun, Geogr. Maldive, Laccadive Archipel., II, p. 623.

1905. *Pinna nigra* Hidalgo, Cat. Filip., p. 370.
1906. *Pinna nigra* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 313.
1906. *Pinna (Atrina) nigra* and *P. (A.) vexillum* Melvill & Standen, Proc. Zool. Soc. London, p. 806.
1906. *Pinna (Atrina) nigra* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 290.
1906. *Pinna nigrina* Owston, Japan. Loochooan Shells, p. 34.
1909. *Pinna (Atrina) nigra* Lamy, Mém. Soc. Zool. France, XXII, p. 340.
1909. *Pinna (Atrina) nigrina* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 125.
1910. *Pinna nigra* Hedley, Austral. Ass. Adv. Sci., XII, p. 344.
1911. *Pinna nigra* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 27.
1917. *Pinna nigra* Odhner, Kungl. Sv. Akad. Handl., LII, N⁰. 16, p. 16.
1919. *Pinna nigra* Odhner, Ark. Zool., XII, N⁰. 6, p. 3.
1924. *Atrina nigra* Hedley, Rec. Austral. Mus., XIV, p. 151.
1925. *Atrina vexillum* Oostingh, Comm. Geol. Inst. Agri. Univ. Wageningen, p. 242.
1929. *Pinna vexillum* Winckworth, Proc. Malacol. Soc. London, XVIII, p. 287.
1929. *Pinna nigra* Dautzenberg, Faun. Colon. Francais., III, Fasc. 4, p. 568.

The synonymy of this species was recently worked out by WINCKWORTH, and I agree with his results. *P. (A.) vexillum* is a fairly variable species, and smooth or spinous forms occur indiscriminately.

Distribution: — *P. (A.) vexillum* has a wide range in the Indo-Pacific and the Red Sea. For details as to localities reference may be made to WINCKWORTH's paper.

In the "Siboga" collection it is represented by shells from Anchorage off Seba, Savu (St. 58); Kambaragi Bay, Tanah Djampeah (St. 64), Tual Anchorage, Kei Islands (St. 258) and Dobo, Aru Islands (St. 272).

2. *Pinna (Atrina) strangei* Reeve. (Plate IV, figs. 11—13).

1858. *Pinna strangei* Reeve, Conch. Icon., XI, *Pinna*, pl. XXVII, fig. 52.
1858. *Pinna hystrix* and *P. strangei* Hanley, Proc. Zool. Soc. London, pp. 226, 254.
1859. *Pinna hystrix* Reeve, Conch. Icon., XI, *Pinna*, pl. XXXII, figs. 60, 61.
1860. *Pinna hystrix* and *P. strangei* Reeve, Elem. Conch., II, p. 69.
1870. *Pinna hystrix* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p, 449.
1877. *Pinna hystrix* Pagenstecher, Kossmann Roth. Meer. Mollusk., p. 30.
1886. *Pinna strangei* von Martens, Ann. Mag. Nat. Hist., (3) XVII, p. 86.
1886. *Pinna hystrix* Cooke, Ann. Mag. Nat. Hist.,, (5) XVII, p. 137.
1890. *Pinna strangei* Clessin, in Martini-Chemn. Conch.-Cab. (N. F.), VIII (I) *Malleacea*, p. 70.
1901. *Pinna hystrix* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXIX, p. 289.
1909. *Pinna hystrix* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 148.
1924. *Atrina strangei* Hedley, Rec. Austral. Mus., XIV, p. 152, pl. XX, fig. 10.
1929. *Pinna (Atrina) strangei* Winckworth, Proc. Malacol. Soc. London, XVIII, p. 289.

As HEDLEY pointed out "the vermiculate sculpture of the ventral limb contrasting with the sharp even radials of the rest of the disk and the proportion of height to length furnish good recognition marks" of the species.

Distribution: — *P. (A.) strangei* is known from such widely separated areas as the Red Sea on the one hand, to Siam, Amboina and Australia on the other.

The "Siboga" Expedition collected a good series of specimens from Kambaragi Bay, Tanah Djampeah (St. 64), Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago (St. 93), Anchorage off Sawan, Siau Island (St. 125), Anchorage off Beo, Karakelang Islands (St. 131), Anchorage between Gisser and Ceram Laut (St. 172), Sanana Bay, east coast of Sula Besi

(St. 193), Saleyer Anchorage (St. 213), Anchorage off Pasir Pandjang, west coast of Binongka (St. 220), Ambon Anchorage (St. 231), Nalahia Bay, Nusa Laut Island (St. 234), Banda Anchorage (St. 240), Anchorage off Kilsuin,, west coast of Kur Island and Pepela Bay, east coast of Rotti Island (St. 301).

3. *Pinna* (*Atrina*) *penna* Reeve. (Plate IV, figs. 14, 15).

1858. *Pinna penna* Reeve, Conch. Icon., XI, *Pinna*, pl. XXI, fig. 39.
1860. *Pinna penna* Reeve, Elem. Conch., II, p. 69.
1888. ? *Pinna penna* Jousseaume, Mém. Soc. Zool. France, I, p. 220.
1890. *Pinna penna* Paetel, Cat. Conch. Samm., III, p. 209.
1891. *Pinna penna* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), VIII (1), *Malleacea*, p. 87, pl. XXXVI, fig. 2.
1896. *Pinna* (*Atrina*) *penna* Casto de Elera, Cat. Sist. Filip., p. 799.
1905. *Pinna penna* Hidalgo, Cat. Filip., p. 370.
1911. *Pinna penna* Pelseneer, "Siboga" Lamellibranches (Anat.), pl. IX, fig. 10.

Dall [1]) and following him Winckworth [2]) have identified *P. squamosissima* Philippi [3]) with *P. serrata* Sowerby [4]) of unknown habitat, and Winckworth has suggested that the reputed locality "Philippines" of *P.* (*A.*) *penna*, "is, I fancy, wrong, as is the case with so many of Reeve's localities. The type-specimen looks like a young *squamosissima* = *serrata*". In view of the "Siboga" expedition having collected a number of specimens, which are identical with Reeve's type of *P.* (*A.*) *penna*, I am unable to agree with the above conclusion.

The shell of *P.* (*A.*) *penna* is very thin, elongated triangular, very slightly arched, with the upper margin almost straight and the lower straight in the posterior half to two-thirds and then suddenly curving forwards to the umbonal region. The surface of the shell in the dorsal limb is very densely ridged, and the ridges, which are low, are covered with very minute scales near the basal part and in the middle, but become much larger near the posterior margin; the ventral limb except in the umbonal area bears fine, uneven wrinkles.

P. (*A.*) *penna* appears to be allied to *P.* (*A.*) *strangei* Reeve, but is distinguished by its much finer texture of shell and more minute sculpture. I cannot agree with Hedley [5]) that *P. penna* is only a synonym of *Atrina inflata* of Dillwyn.

Distribution: — *P.* (*A.*) *penna* was described from the Philippine Islands. Jousseaume's record of the species from Aden is open to question.

In the "Siboga" collection *P. penna* is represented by specimens from Haingsisi, Samau Island, Timor (St. 60), Sulu Harbour, Sulu Island (St. 104), Banda Anchorage (St. 240), St. 260 (5° 36'.5 S., 132° 55'.2 E.) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

4. *Pinna* (*Atrina*) *pectinata* Linn.

1767. *Pinna pectinata* Linnaeus, Syst. Nat., (ed. XII), p. 1160.
1823. *Pinna cancellata* Mawe, Linn. Syst., p. 77.
1857. *Pinna* (*Atrina*) *pectinata* Adams, H. & A., Gen. Rec. Shells, II, p. 530.

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[1]) Dall, W. H. — Nautilus, XI, p. 26 (1897), also see Dall, W. H. — Trans. Wagner Free Inst. Sci. Philadelphia, III (4). pp. 664—665 (1898).

[2]) Winckworth, R. — Proc. Malacol. Soc. London, XVIII, p. 294 (1929).

[3]) Philippi, R. A. — In Roemer, C. F., Texas, p. 454, (Bonn, 1849).

[4]) Sowerby, G. B. — Tankerville Cat. Appendix, p. 5 (1825) and Gen. Rec. Fossil Moll., I, pl. CII (1825).

[5]) Hedley, C. — Rec. Austral. Mus., XIV, p. 151 (1924).

1858. *Pinna Hanleyi, P. lurida, P. serra, P. Japonica, P. Chemnitzii* and *P. assimilis* Reeve, Conch. Icon., XI, *Pinna*, pl. VIII, fig. 15; pl. XIII, fig. 24; pl. XXIII, fig. 43; pl. XXV, fig. 47; pl. XXIX, fig. 55; pl. XXXI, fig. 59.
1858. *Pinna Chemnitzii* Hanley, Proc. Zool. Soc. London, p. 136.
1859. *Pinna Chemnitzii* Reeve, Conch. Icon., XI, *Pinna*, pl. I, fig. 1.
1860. *Pinna assimilis, P. Chemnitzii, P. Hanleyi, P. Japonica, P. lurida* and *P. serra* Reeve, Elem. Conch., II, p. 69.
1866. *Pinna pectinata, P. Hanleyi, P. Japonica, P. serra, P. Chemnitzii* and *P. assimilis* von Martens, Ann. Mag. Nat. Hist., (3) XVII, pp. 85, 86.
1867. *Pinna Chemnitzii* Hidalgo, Journ. Conchyliol., XV, p. 170.
1869. *Pinna Japonica* Lischke, Jap. Meeres-Conch., p. 159.
1882. *Pinna Chemnitzii* Dunker, Ind. Moll. Mar. Japon., p. 231.
1889. *Pinna Chemnitzii* Morlet, Journ. Conchyliol., XXIX, p. 161.
1890. *Pinna serra* and *P. Japonica* Clessin, in Martini-Chemn. Conch.-Cab. (N. F.), VIII (I), *Malleacea*, p. 60, pl. XXVIII, fig. 1.
1890. *Pinna assimilis, P. Chemnitzii, P. Hanleyi, P. Japonica, P. lurida* and *P. serra* Paetel, Cat. Conch. Samm., III, pp. 208, 209.
1891. *Pinna Lischkeana, P. Hanleyi, P. lurida, P. Chemnitzii* and *P. assimilis* Clessin, in Martini-Chemn. Conch.-Cab. (N. F.), VIII (I), *Malleacea*, p. 73, pl. XXVIII, fig. 1; p. 89, pl. XXXVIII, fig. 2; p. 93, pl. XLI, fig. 1 and p. 97, pl. XLVI, fig. 1.
1891. *Pinna serra* Smith, Proc. Zool. Soc. London, p. 433.
1906. *Pinna chemnitzii* Standen & Leicester, Ceylon Pearl Oyster Rept. V, p. 290.
1909. *Pinna serra* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 149.
1917. *Pinna Chemnitzi* Odhner, Kungl. Sv. Akad. Handling., LII, N⁰ 16, p. 7.
1924. *Pinna Chemnitzii* Hedley, Rec. Austral. Mus., XIV, p. 149.
1929. *Pinna* (*Atrina*) *pectinata* Winckworth, Proc. Malacol. Soc. London, XVIII, p. 288.

I have examined the entire material in the British Museum (Nat. Hist.), London and several other collections, and agree with Winckworth that there exist all gradations between the strongly spinous form described as *P. assimilis* by Reeve and the almost smooth form which was given the name *P. lurida*. Further, the wrinkling of the ventral surface of the shell is also very variable and intermediates connect up the forms described as *P. hanleyi* and *P. lurida*. The outline of the dorsal margin may be straight or incurved.

Distribution: — *P.* (*A.*) *pectinata* is widely distributed in the Indo-Pacific area. For detail of localities reference may be made to Winckworth's paper cited above.

In the "Siboga" collection there are two somewhat broken young shells resembling the form figured as *P. serra* in "Conchologia Iconica" from St. 294 (10° 12′.2 S., 124° 27′.3 E.; depth 173 metres).

Subgenus **Streptopinna** von Martens.

1880. *Streptopinna* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 318.
1929. *Streptopinna* Winckworth, Proc. Malacol. Soc. London, XVIII, pp. 282, 283.

This peculiar subgenus has been recently discussed in detail by Winckworth. The type of the monotypic subgenus is *Pinna* (*Streptopinna*) *saccata* Linn.

1. *Pinna* (*Streptopinna*) *saccata* Linn.

1741. *Pinna prima sive oblonga* and *P. alba* Rumph, Amboin. Rarit., p. 153, pl. XLVI, figs. I, *k*, *n*.
1758. *Pinna saccata* Linnaeus, Syst. Nat., (ed. X), p. 707.

1764. *Pinna saccata* Linnaeus, Mus. Lud. Ulr., p. 546.
1767. *Pinna saccata* Linnaeus, Syst. Nat., (ed. XII), p. 1160.
1770. *Pinna Saccata* Huddersford, Ind. Listeri, II, p. 28.
1780. *Moule* Favanne, Conchyl., pl. 1, fig. *c*.
1786. *Pinna saccata* Schröter, Einleit., III, p. 481, pl. IX, fig. 17.
1787. *Pinna Saccata* Meuschen, Mus. Geversianum, pp. 410, 412.
1788. *Pinna saccata* Barbut, Gen. Verm., p. 73, pl. XII, fig. 3.
1790. *Pinna saccata* Gmelin, Syst. Nat., (ed. XIII), p. 3365.
1797. Bruguière, Encyclopéd. Méthod. pl. CC, fig. 4.
1802. *Pinna saccata* Bosc, Hist. Nat. Coq., III, p. 177.
1814. *Pinna saccata* Leach, Zool. Miscell., I, p. 130, pl. LVII.
1817. *Pinna saccata* Dillwyn, Descr. Cat.., I, p. 331.
1819. *Pinna saccata* Lamarck, Hist. Nat. Anim. sans Vertèb., VI, p. 133.
1825. *Pinna saccata* Sowerby, Cat. Tankerville, p. 23.
1826. *Pinna saccata* Blainville, Dict. Sci. Nat., XLI, p. 69.
1830. *Pinna saccata* Menke, Synop. Méthod. Moll., p. 102.
1832. *Pinna saccata* Deshayes, Encyclopéd. Méthod., III, p. 769.
1836. *Pinna saccata* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 65.
1837. *Pinna Nuttali* Conrad, Journ. Acad. Nat. Sci. Philadelphia, VII, p. 244.
1843. *Pinna saccata* Hanley, Rec. Biv. Shells, p. 253, pl. XXIV, fig. 35.
1845. *Pinna saccata* Catlow & Reeve, Conch. Nomencl., p. 76.
1853. *Pennaria saccata* Mörch, Cat. Yoldi, II, p. 52.
1855. *Pinna saccata* Hanley, Ipsa Linn. Conch. p. 152.
1855. *Pinna saccata* Berge, Conchylienbuch, p. 86.
1856. *Pinna saccata* Hanley in Wood, Ind. Test., p. 72, pl. XIII, fig. 16.
1857. *Pinna* (*Atrina*) *saccata* Adams, H. & A., Gen. Rec. Moll., II, p. 530.
1858. *Pinna saccata* and var. *elongata* Reeve, Conch. Icon., XI, *Pinna*, pl. IV, figs. 6, 6*a*.
1860. *Pinna saccata* Reeve, Elem. Conch., II, p. 69.
1862. *Pinna* (*Atrina*) *saccata* Chenu, Man. Conchyliol., II, p. 165.
1863. *Pinna saccata* Deshayes, Cat. Moll. Réunion, p. 29.
1866. *Pinna saccata* von Martens, Ann. Mag. Nat. Hist., (3) XVII, p. 87.
1867. *Pinna saccata* Mitchell, Cat. Mus. Madras, p. 72.
1870. *Pinna* (*Atrina*) *saccata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 449.
1879. *Pinna saccata* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 741.
1880. *Pinna* (*Streptopinna*) *saccata* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 318.
1882. *Pinna saccata* Dunker, Ind. Moll. Mar. Japon., p. 231.
1884. *Pinna* (*Atrina*) *saccata* Tryon, Struct. Syst. Conch., III, p. 283, pl. CXXXI, fig. 68.
1886. *Pinna* (*Streptopinna*) *saccata* Fischer, P., Man. Conchyliol., p. 969.
1890. *Pinna* (*Atrina*) *saccata* Paetel, Cat. Conch. Samm., III, p. 209.
1891. *Pinna saccata* Clessin in Martini & Chemn. Conch.-Cab. (N. F.), VIII (I), *Malleacea*, p. 84, pl. XXXI, fig. 1, pl. XXXV, fig. 1.
1892. *Pinna saccata* Sowerby, Mar. Shells S. Africa, Suppl. p. 27.
1895. *Pinna saccata* Pilsbry, Cat. Mar. Shells Japan, p. 147.
1896. *Pinna* (*Atrina*) *saccata* Casto de Elera, Cat. Sist. Filip., p. 799.
1901. *Pinna saccata* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.) LXIX, p. 289.
1903. *Pinna saccata* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 623.
1905. *Pinna saccata* Hidalgo, Cat. Filip., p. 370.
1906. *Pinna saccata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 313.
1906. *Pinna saccata* Owston, Japan. Loochooan Shells, p. 34.
1909. *Pinna saccata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 468.
1911. *Pinna saccata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 130.
1928. *Pinna* (*Streptopinna*) *saccata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXXIV, p. 353.
1929. *Pinna* (*Streptopinna*) *saccata* Winckworth, Proc. Malacol. Soc. London, XVIII, p. 289.
1929. *Pinna saccata* Dautzenberg, Faun. Colon. Francais., III, Fasc. 4, p. 569.

As REEVE pointed out so long ago *Pinna* (*Streptopinna*) *saccata* is one of the most variable species of the genus, and its shells are distorted into "all sorts of forms; even shells from the same locality vary in reference to the form, colour and texture of the shells". The "Amber-red horny substance" of the shell, which REEVE considered as "quite peculiar" of the species, is not by any means so, young shells are quite white, thin and papery, but are connected by intermediate forms with shells having the amber-red colour. The number of longitudinal ribs and furrows is also very variable; in the specimens before me it ranges between 6—20. Younger shells are usually more regular in shape, being almost triangular and *Pinna*-like, but older shells become distorted and often assume very bizarre and contorted outlines.

Distribution: — BARTSCH [1]) apparently following LINNAEUS stated that *P.* (*S.*) *saccata* is a Mediterranean species, but LINNAEUS stated Mediterranean and Indian Ocean as its range, though the figures cited were apparently from the Indian Ocean. LAMARCK restricted its distribution to the Indian Ocean, and more recent workers, such as WINCKWORTH have recorded its range as the Indo-Pacific and the Red Sea.

In the "Siboga" collection *P.* (*S.*) *saccata* is represented by specimens from Anchorage off Atjatuning, west coast of New Guinea (St. 169), Waru Bay, north coast of Ceram (St. 174), St. 182 (3° 46′ S., 127° 42′ E.), Anchorage off Pasir Pandjang, west coast of Binongka (St. 220), St. 225 (5700 M. N., 279° East from south Point of South Lucipara Island), Ambon Anchorage (St. 231), Nalahia Bay, Nusa Laut Island (St. 234).

Family CRASSATELLIDAE.

Genus **Crassatella** Lamarck.

1799. *Crassatella* Lamarck, Mém. Soc. d'Hist. Nat., Paris, p. 85.
1801. *Crassatella* Lamarck, Syst. Anim. sans Vertèb., p. 119.
1930. *Crassatella* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N° 3, p. 134.

DALL and several other authors have replaced *Crassatella* Lamarck by *Crassatellites* Krueger, as the figure cited by LAMARCK in the first work cited above is that of a *Mactra*. His description, however, is that of a *Crassatella* and he corrected the wrong citation in his second work. I, therefore, agree with STEWART that there is sufficient justification for accepting *Crassatella* in preference to *Crassatellites*; the unsatisfactory nature of the latter name has also been commented upon by IREDALE [2]).

The genotype is *Crassatella ponderosa* (Gmelin).

1. *Crassatella picta* Adams & Reeve.

1850. *Crassatella picta* Adams & Reeve, "Samarang" Moll., p. 82, pl. XXIII, fig. 6.
1857. *Crassatella picta* Adams, H. & A., Gen. Rec. Moll., II, p. 486.
1860. *Crassatella picta* Reeve, Elem. Conch., II, p. 141.
1886. *Crassatella picta* Loebbecke & Kobelt, in Martini-Chemn. Conch.-Cab. (N. F.), X (1*a*), *Crassatella*, p. 18, pl. VI, fig. 8.

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1) BARTSCH, P., Bull. U. S. Nat. Mus., XCI, p. 247 (1915).
2) IREDALE, T. — Proc. Malacol. Soc. London, XIV, p. 206 (1921).

1890. *Crassatella picta* Paetel, Cat. Conch. Samm., III, p. 139.
1896. *Crassatella picta* Casto de Elera, Cat. Sist. Filip., p. 786.
1906. *Crassatella picta* Melvill & Standen, Proc. Zool. Soc. London, p. 814.
1928. *Crassatellites pictus* Faustino, Summary Philippine Mar. Freshw. Moll. p. 47.

LAMY[1]) considers *C. picta* as a possible synonym of *C. ziczac* Reeve, but in view of the more rostrate form and the much more regular and finer sculpture of *C. Ziczac* I am inclined to regard it as distinct from *C. picta*.

Distribution: *C. picta* was described from the Philippines and has since been recorded from the Persian Gulf.

In the "Siboga" collection the species is represented by a young shell dredged in the Anchorage off North Ubian (St. 99).

2. *Crassatella radiata* Sowerby.

1825. *Crassatella radiata* Sowerby, Cat. Tankerville, p. 7, Appendix, p. 11, pl. I, fig. 2.
1841. *Crassatella radiata* Reeve, Conch. Syst. I, p. 63, pl. XLIV, fig. 1.
1843. *Crassatella radiata* Reeve, Conch. Icon., I, *Crassatella*, pl. III, fig. 12.
1843. *Crassatella Radiata* Hanley, Rec. Biv. Shells, p. 37.
1845. *Crassatella radiata* Catlow & Reeve, Conch. Nomencl., p. 15.
1857. *Crassatella radiata* Adams, H. & A., Gen. Rec. Moll., II, p. 486.
1860. *Crassatella radiata* Reeve, Elem. Conch., II, p. 141.
1878. *Crassatella radiata* Smith, Proc. Zool. Soc. London, p. 820.
1881. *Crassatella radiata* Loebbecke & Kobelt, in Martini-Chemn. Conch.-Cab. (N. F.), X (1*a*), *Crassatella*, p. 14, pl. VI, fig. 2.
1884. *Crassatella radiata* Grasset, Ind. Test. Viv., p. 282.
1890. *Crassatella radiata* Paetel, Cat. Conch. Samm., III, p. 139.
1892. *Crassatella radiata* Crosse & Fischer, Journ. Conchyliol., XL, p. 76.
1902. *Crassatella radiata* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1904. *Crassatella radiata* Smith, Ann. Mag. Nat. Hist., (7) XIV, p. 9.
1906. *Crassatella radiata* Melvill & Standen, Proc. Zool. Soc. London, p. 814.
1906. *Crassatellites radiata* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 291.
1909. *Crassatella radiata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 163.
1911. *Crassatella radiata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 37.
1917. *Crassatella radiata* Lamy, Journ. Conchyliol., LXII, p. 225.

The single young shell, which I assign to this species with some hesitation, was dredged in the Western entrance of Samau Strait (St. 59). The sculpture of this shell is similar to that of *C. radiata*, but the young shell is much less rostrate.

C. radiata is widely distributed in the Indian Ocean, the Persian Gulf and the Red Sea.

3. *Crassatella ziczac* Reeve.

1842. *Crassatella ziczac* Reeve, Proc. Zool. Soc. London, p. 45.
1843. *Crassatella ziczac* Reeve, Conch. Icon., I, *Crassatella*, pl. III, fig. 13.
1845. *Crassatella ziczac* Catlow & Reeve, Conch. Nomencl., p. 15.
1847. *Crassatella ziczac* Nyst, Bull. Acad. Roy. Belgique, XIV, p. 128.
1857. *Crassatella ziczac* Adams, H. & A., Gen. Rec. Moll., II, p. 486.
1860. *Crassatella ziczac*, Elem. Conch., II, p. 141.

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1) LAMY, E. — Journ. Conchyliol., LXII, p. 229 (1917).

1886. *Crassatella ziczac* Loebbecke & Kobelt in Martini-Chemn. Conch.-Cab. (N. F.), X, (1*a*), *Crassatella*, p. 28, pl. VIII, fig. 6.
1890. *Crassatella ziczac* Paetel, Cat. Conch. Samm., III, p. 139.
1896. *Crassatella ziczac* Casto de Elera, Cat. Sist. Filip., p. 786.
1905. *Crassatella ziczac* Hidalgo, Rev. Roy. Acad. Cienc. Madrid, III, p. 16.
1909. *Crassatella ziczac* Hedley, Austral. Ass. Adv. Sci., XII, p. 346.
1917. *Crassatella ziczac* Lamy, Journ. Conchyliol., LXII. p. 229.

The shells, which I assign to this species, are weathered and do not show the distinctive colouration of *C. ziczac*. The shells are subtrigonal, rounded anteriorly, subtruncated and angulate posteriorly, and have a sculpture consisting of course but regular concentric ridges.

Distribution: — *C. ziczac* is known from Australia and the Philippines.

The "Siboga" Expedition dredged a right valve at St. 159 (0° 59′.1 S., 129° 48′.8 E., 411 metres) and a complete shell from the mid-channel im Solor Strait off Kampong Menanga (St. 305).

4. *Crassatella spp.*

I have not been able to definitely assign a number of young shells from the western entrance of Samau Strait (St. 59), St. 95 (5° 43′.5 N., 119° 40′ E., 522 metres) and Banda Anchorage (St. 240) to any species. They resemble *Crassatella kingicola* Lam.[1]), but with young and worn shells it is impossible to be certain.

Family CARDITIDAE.

Genus **Cardita** Bruguière.

1792. *Cardita* (ex parte), Bruguière, Encycloped. Méthod., I p. 401.
1799. *Cardita* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 86.
1801. *Venericardia* Lamarck, Syst. Anim. sans Vertèb., p. 123.
1847. *Jesonia* Gray, Proc. Zool. Soc. London, p. 194.
1847. *Mytilicardia* Hermannsen, Ind. Gen. Malacol., II, p. 83.
1857. *Mytilicardia* Adams, H. & A., Gen. Rec. Moll., II, p. 488.
1902. *Cardita* Dall, Proc. Acad. Nat. Sci. Philadelphia, p. 698.
1903. *Cardita* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1411.
1922. *Cardita* Lamy, Journ. Conchyliol., LXVI, p. 220.
1925. *Cardita* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 98.
1927. *Cardita* Cox, Rept. Palaeontol. Zanzibar, p. 51.
1930. *Cardita* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 5, p. 149.

For good definitions of the genus *Cardita* reference may be made to DALL, LAMY, and WOODRING. *Cardita antiquata* (Linn.) was designated as the genotype by CHILDREN[2]), and as a result *Cardites* Link[3]) with the same genotype becomes an absolute synonym. DALL's and LAMY's treatment of the genera *Cardita* and *Venericardia* needs a certain amount of modification.

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1) For references to this species see LAMY, E. — Journ. Conchyliol., LXII, p. 205 (1917). — IREDALE, J. — Proc. Linn. Soc. N. S. Wales, XLIX, p. 202 (1924) has suggested separating *C. kingicola* with some other species in his new genus *Eucrassatella*-type *Eucrassatella kingicola* (Lam.).

2) CHILDREN, J. G. — Quart. Journ. Sci. Lit. Arts, XIV, p. 316 (1823).

3) LINK, H. F., Beschreib. Nat. Samm. Univ. Rostock, p. 153 (1807).

As Cox has pointed out, *Cardita* and *Venericardia* are both based on Cardioid species and not on forms with a Cardioid and Mytiloid facies respectively, as stated by DALL. Fortunately, as STEWART has rightly indicated, for the Mytiloid forms the names *Arcinella* Oken and *Mytilicardia* Anton are available; both of these have the Linnaean *Chama calyculata* as the type, and I select the older *Arcinella* as the subgeneric name for the Mytiloid forms.

1. *Cardita* (*Arcinella*) *variegata* Bruguière.

1685. *Pectunculus* Lister, Hist. Conch., pl. CCCXLVII, fig. 184.
1770. *Cardita calyculata* Huddersford (non Linnaeus), Ind. Listeri, II, p. 16.
1780. *Chama calyculata* Born (non Linnaeus), Test. Mus. Caes. Vindobon., p. 82, pl. V, figs. 10, 11.
1784. *Chama calyculata Linnaei* Chemnitz, Conch.-Cab., VII, p. 133, pl. I, figs. 500, 501.
1788. *Chama calyculata* Schröter, Conch.-Cab. Namen. Reg., p. 20.
1792. *Cardita variegata* Bruguière, Encycloped. Méthod., p. 402.
1797. Bruguière, Encycloped. Méthod., pl. CCXXIII, fig. 6.
1798. *Corbula calyculata* Röding, Mus. Boltenianum, p. 185.
1801. *Cardita variegata* Lamarck, Syst. Anim. sans Vertèb., p. 118.
1802. *Cardita variegata* Bosc, Hist. Nat. Coq., III, p. 88.
1805. *Cardita variegata* De Roissy in Buffon, Hist. Nat. Moll., VI, p. 344.
1817. *Cardita variegata* Blainville, Dict. Sci. Nat., VII, p. 88.
1819. *Cardita calyculata* (non Linn.) and *C. subaspera* Lamarck, Anim. sans Vertèb., VI, pp. 24, 25.
1824. *Cardita subaspera* Dubois, Epitome, p. 79.
1825. *Chama calyculata* Wood, Ind. Test., p. 42, pl. IX, fig. 10.
1827. *Cardita calyculata* Crouch, Introd. Conch., p. 14, pl. VIII, fig. 10.
1830. *Cardita Calyculatus* Sowerby, Gen. Shells, II, *Cardita*, pl. I, figs. 1, 2.
1835. *Cardita calyculata*, *C. subaspera* and *C. variegata* Deshayes, in Lamarck, Anim. sans Vertèb., VI, pp. 431, 432.
1840. *Cardita calyculata* Swainson, Treat. Malacol., p. 375.
1841. *Cardita calyculatus* Reeve, Conch. Syst., I. p. 102, pl. LXXIX, fig. 2.
1841. *Cardita subaspera* Delessert, Réc. Coq. Lamarck, pl. XI, fig. 9.
1843. *Cardita variegata* Reeve, Conch. Icon., I, *Cardita*, pl. I, fig. 3.
1843. *Cardita Variegata* Hanley, Rec. Biv. Shells, p. 147.
1844. *Cardita Calyculata* Potiez & Michaud, Gall. Douai, II, p. 160.
1845. *Cardita variegata* Catlow & Reeve, Conch. Nomencl., p. 47.
1848. *Cardita variegata* Krauss, Südafr. Moll., p. 13.
1853. *Mytilocardia variegata* Mörch, Cat. Yoldi, II, p. 38.
1855. *Cardita calyculata* Berge, Conchylienbuch, p. 74, pl. IX, fig. 7.
1856. *Chama calyculata* Hanley in Wood, Ind. Test., p. 53, pl. IX, fig. 10.
1857. *Mytilicardia variegata* Adams, H. & A., Gen. Rec. Moll., II, p. 488.
1862. *Cardita calyculata* Chenu, Man. Conchyliol., II, p. 135, fig. 650.
1863. *Cardita variegata* Deshayes, Moll. Ile Réunion, p. 21.
1867. *Cardita variegata* Mitchell, Cat. Mus. Madras, p. 69.
1869. *Cardita variegata* Issel, Malacol. Mar. Rosso, p. 80.
1869. *Mytilicardia variegata* Dunker, Cat. Mus. Godeffroy, IV, p. 113.
1870. *Actinobulus* (sic) *variegata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1870. *Cardita variegata* Fischer, Journ. Conchyliol., XVIII, p. 171.
1874. *Mytilicardia variegata* Dunker, Cat. Mus. Godeffroy, V, p. 178.
1879. *Cardita variegata* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 742.
1880. *Cardita* (*Mytilocardia*) *variegata* von Martens, Möbius Beiträg. Meersf. Mauritius, Seychell., p. 321.
1880. *Cardita Calyculata* Woodward, Man. Conch., p. 471, pl. XX, fig. 5.

1881. *Mytilicardia variegata* De Rochebrune, Bull. Soc. Philomat. Paris, (7), VI, p. 12.
1884. *Mytilicardia variegata* Grasset, Ind. Test. Viv., p. 283.
1886. *Cardita variegata* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, pp. 101, 389.
1887. *Cardita variegata* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 208.
1888. *Cardita variegata* Jousseaume, Mém. Soc. Zool. France, I, p. 211.
1888. *Cardita variegata* Clessin in Martini & Chemn. Conch.-Cab. (N. F.), X (I), *Carditacea*, p. 23, pl. III, figs. 8, 9, pl. XI, figs. 5, 6.
1890. *Cardita variegata* Böttger, Ber. Senckenberg. Nat. Gesell., p. 170.
1890. *Mytilicardia variegata* Paetel, Cat. Conch. Samm., III, p. 142.
1891. *Cardita variegata* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 228.
1892. *Cardita variegata* Sowerby, Mar. Shells S. Africa, p. 62.
1895. *Cardita variegata* Pilsbry, Cat. Mar. Moll. Japan, p. 135.
1898. *Mytilicardia variegata* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 46.
1899. *Mytilicardia variegata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 188.
1901. *Mytilicardia variegata* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 288.
1902. *Cardita variegata* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1903. *Cardita variegata* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 291.
1905. *Cardita variegata* Anthony, Bull. Mus. d'Hist. Nat. Paris, XI, p. 491.
1905. *Cardita variegata* Hidalgo, Cat. Filip., p. 361.
1906. *Cardita variegata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 465.
1906. *Cardita variegata* Owston, Japan. Loochooan Shells, p. 35.
1906. *Mytilicardia variegata* Melvill & Standen, Proc. Zool. Soc. London, p. 814.
1909. *Mytilicardia variegata* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 129.
1909. *Cardita variegata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 167.
1909. *Cardita variegata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 465.
1909. *Cardita variegata* Hedley, Austral. Ass. Adv. Sci., XII, p. 347.
1909. *Cardita variegata* Lamy, Mém. Soc. Zool. France, XXII, p. 341.
1911. *Cardita variegata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 38, pl. XIII, fig. 3.
1915. *Cardita variegata* Bartsch, Bull. U. S. Nat. Mus., XCI, p. 192.
1916. *Cardita calyculata* and *C. subaspera* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXII, p. 116.
1916. *Cardita variegata* Lamy, loc. cit., p. 311.
1922. *Cardita variegata* Lamy, Journ. Conchyliol., LXVI, p. 244.
1925. *Cardita variegata* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N⁰ 9, p. 270.
1928. *Cardita variegata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 50.
1929. *Cardita variegata* Dautzenberg, Faun. Colon. Francais., III, p. 583.

As Lamy rightly remarked there can be no doubt that *C. calyculata* Lam. (non Linn.), and *C. aspera* Lam. are both synonyms of *C.* (*A.*) *variegata* Bruguière.

The number of ribs on the shell is variable and not definitely twenty, as described by Reeve. The "vaulted scales" are found only on adult shells, and may take on the form of foliaceous spines or be altogether obsolete. The colour of the shells is usually some shade of yellow with a large number of bluish or blackish spots often arranged in several rows transversely to the ribs.

Distribution: — *C.* (*A.*) *variegata* has a very wide range in the Indo-Pacific, and has also been recorded from the Persian Gulf and the Red Sea.

The "Siboga" Expedition collected a fair series of shells from the Anchorage off Pulu Sarassa, Postillon Islands (St. 43), Madura Bay, Molo Strait (St. 51), Western entrance, Samau Strait (St. 59), Macassar (St. 71), Anchorage off Kawio and Kamboling Islands, Karakelang Group (St. 129), Saleyer Anchorage (St. 213) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

2. *Cardita* (*Arcinella*) *pica* Reeve.

1843. *Cardita pica* Reeve, Conch. Icon., I, *Cardita*, pl. II, figs. 8*a*, *b*.
1844. *Cardita pica* Reeve, Proc. Zool. Soc. London (vol. for 1843), p. 191.
1854. *Cardita Essingtonensis* and *C. umbilicata* Deshayes, Proc. Zool. Soc. London (vol. for 1852), p. 100.
1856. *Cardita pica* Hanley, Rec. Biv. Shells, p. 368, pl. XVIII, fig. 11.
1857. *Mytilicardia Essingtonensis*, *M. pica* and *M. umbilicata* Adams, H. & A., Gen. Rec. Moll., II, p. 488.
1869. *Cardita pica* Lischke, Japan. Meeresconch., I. p. 145.
1882. *Mytilicardia pica* Dunker, Ind. Moll. Mar. Japon., p. 221.
1888. *Cardita umbilicata*, *C. pica* and *C. Essingtonensis* Clessin in Martini-Chemn. Conch.-Cab. (N. F.) X (1), *Carditacea*, pp. 22, 39, pl. VIII, figs. 13, 14, pl. XI, figs. 11, 12.
1890. *Cardita umbilicata*, *Mytilicardia Essingtonensis* and *Lazaria pica* Paetel, Cat. Conch. Samm., III, pp. 141, 142.
1922. *Cardita pica* Lamy, Journ. Conchyliol., LXVI, p. 234.
1928. *Cardita pica* Faustino, Summary Phillippine Mar. Freshw. Moll., p. 50.

I agree with LAMY that both *Cardita essingtonensis* Deshayes and *C. umbilicata* Deshayes are synonyms of *C.* (*A.*) *pica* Reeve. The distinguishing characters of the species are well defined by REEVE, and the figures in "Conch. Icon." and HANLEY's "Rec. Biv. Shells" make it quite easy to distinguish the species.

Distribution: — *C.* (*A.*) *pica* has been recorded from the Pacific Ocean from Japan to the Philippines.

The "Siboga" Expedition collected two shells in the Bay of Bima (St. 47) and on the reef on the east side of Pajunga Island, Kwandang Bay (St. 115).

3. *Cardita* (*Arcinella*) *aviculana* Lam., var. *excavata* Deshayes.

1854. *Cardita excavata* Deshayes, Proc. Zool. Soc. London, (vol. for 1852), p. 100, pl. XVII, figs. 1–3.
1857. *Mytilicardia excavata* Adams, H. & A., Gen. Rec. Moll., II, p. 488.
1860. *Cardita excavata* Reeve, Elem. Conch., II, p. 100.
1867. *Mytilicardia excavata* Angas, Proc. Zool. Soc. London, p. 928.
1878. *Mytilicardia excavata* Hutton, Journ. Conchyliol., XXVI, p. 52.
1885. *Cardita excavata* Smith, "Challenger" Lamellibranchia, p. 210.
1888. *Cardita excavata* Clessin, in Martini-Chemn. Conch.-Cab. (N. F.), X (1), *Carditacea*, p. 21.
1890. *Mytilicardia excavata* Paetel, Cat. Conch. Samm., III, p. 142.
1894. *Mytilicardia excavata* Henn, Proc. Linn. Soc. N. S. Wales, (2) IX, p. 180.
1922. *Cardita aviculana* var. *excavata*, Lamy, Journ. Conchyliol., LXVI, p. 230.

SMITH was certainly mistaken in suggesting that *C. essingtonensis* Deshayes, *C. umbilicata* Deshayes and *C. pica* Reeve are allied to *C. excavata* Deshayes, and "will eventually prove to be variations of the same shell". SUTER [1]) considers *C. excavata* to be a synonym of *C. calyculata* (Linn.), but I agree with LAMY that it is a variety of *C.* (*A.*) *aviculana* Lam. This variety is distinguished by its very inequilateral shell, with a very short and subtruncate anterior margin, the shell broader in the posterior half and ornamented with scaly ridges.

Distribution: — *C.* (*A.*) *aviculana* var. *excavata* has so far been recorded from the Pacific Ocean, near the coasts of Australia and New Zealand.

In the "Siboga" collection there is a single young shell dredged at St. 164 (1° 42′.5 S., 130° 57′.5 E., 32 metres), which I refer to this variety.

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1) SUTER, H. — Man. New Zealand Moll., p. 903 (1913).

4. *Cardita* (*Venericardia*) *ovalis* Reeve.

1843. *Cardita ovalis* Reeve, Conch. Icon., I, *Cardita*, pl. VI, fig. 27*c*.
1844. *Cardita ovalis* Reeve, Proc. Zool. Soc. London (vol. for 1843), p. 193.
1845. *Cardita ovalis* Catlow & Reeve, Conch. Nomencl., p. 46.
1857. *Actinobolus ovalis* Adams, H. & A., Gen. Rec. Moll., II, p. 487.
1870. *Actinobulus* (sic) *ovalis* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1884. *Cardita ovalis* Grasset, Ind. Test. Viv., p. 283.
1887. *Cardita ovalis* Clessin, in Martini-Chemn. Conch.-Cab. (N. F.), X (I), *Carditacea*, p. 7, pl. V, figs. 8, 9.
1890. *Cardita ovalis* Paetel, Cat. Conch. Samm., III, p. 140.
1896. *Cardita ovalis* Casto de Elera, Cat. Sist. Filip., p. 786.
1905. *Venericardia ovalis* Hidalgo, Cat. Filip., p. 361.
1911. *Cardita ovalis* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 38, pl. XIII, fig. 2.
1922. *Venericardia* (*Cardites*) *ovalis* Lamy, Journ. Conchyliol., LXVI, p. 327.
1928. *Venericardia ovalis* Faustino, Summary Philippine Mar. Freshw. Moll., p. 51.

C. (*V.*) *ovalis* is, as was pointed out by LAMY, closely allied to *C.* (*V.*) *nitida* Reeve from the Philippine Islands, but is easily distinguished by the much smaller number of ridges (18—19) on the surface of the shells. The interspaces between the ribs in the case of *C.* (*V.*) *ovalis* are comparatively broader than those of *C.* (*V.*) *nitida*. The smoothness of the posterior ribs, which is considered of importance by both REEVE and LAMY, becomes marked only in adult shells; in young shells all the ribs are crenated, and the middle ones appear almost beaded.

Distribution: — *C.* (*V.*) *ovalis* was described from the Philippines. MACANDREW has also recorded it from the Gulf of Suez.

The "Siboga" Expedition collected a fair series of young shells from the Bay of Pidjot, Lombok (St. 33), Anchorage off Lirung, Salibabu Island (St. 133) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

5. *Cardita* (*Venericardia*) *castanea* Deshayes.

1854. *Cardita castanea* Deshayes, Proc. Zool. Soc. London (vol. for 1852), p. 102, pl. XVII, fig. 11.
1888. *Cardita castanea* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), X (I), *Carditacea*, p. 21.
1890. *Cardita castanea* Paetel, Cat. Conch. Samm., III, p. 140.

DURING growth *C.* (*V.*) *castanea* undergoes a great deal of change in the sculpture of the shells. The ridges on the young shells and even on the beak of older shells are somewhat rounded and greatly crenated. Lower down, however, the ridges become flatter and appear almost smooth. The interspaces are moderately deep and narrow.

Distribution: — *C.* (*V.*) *castanea* was described from the Australian waters.

The "Siboga" Expedition collected a fair series of young and half grown shells from the Anchorage off Djankar, Java (St. 4), Bay of Pidjot, Lombok (St. 33), Bay of Bima (St. 47), Macassar (St. 71), Anchorage off North Ubian (St. 99), Sulu Harbour, Sulu Island (St. 104) and Anchorage east of Dangar Besar, Saleh Bay, (St. 313).

Remarks: — LAMY[1]) considered this species to be closely allied to the Red Sea form *C.* (*V.*) *rufa* Laborde.

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[1]) LAMY, E. — Journ. Conchyliol., LXVI, p. 324 (1922).

6. *Cardita* (*Venericardia*) *cardioides* Reeve.

1843. *Cardita cardioides* Reeve, Conch. Icon., I, *Cardita*, pl. IX, figs. 49 *a—c*.
1844. *Cardita cardioides* Reeve, Proc. Zool. Soc. London, (vol. for 1843), p. 194.
1845. *Cardita cardioides* Catlow & Reeve, Conch. Nomencl., p. 46.
1857. *Actinobolus cardioides* Adams, H. & A., Gen. Rec. Moll., II, p. 487.
1870. *Actinobulus* (sic) *cardioides* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1886. *Cardita cardioides* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 101.
1888. *Cardita cardioides* Clessin in Martini-Chemn. Conch.-Cab. (N. F.), X (1), *Carditacea* p. 31, Pl. XII, figs. 1—3.
1890. *Cardita cardioides* Paetel, Cat. Conch. Samm , III, p. 140.
1896. *Cardita cardioides* Casto de Elera, Cat. Sist. Filip., p. 786.
1905. *Venericardia cardioides* Hidalgo, Cat. Filip., p. 360.
1909. *Cardita cardioides* Hedley, Austral. Ass. Adv. Sci., XII, p. 347.
1922. *Venericardia* (*Cardites*) *cardioides* Lamy, Journ. Conchyliol., LXVI, p. 329.
1928. *Cardita cardioides* Faustino, Summary Philippine Mar. Freshw. Moll. p. 50.

SMITH[1]) united *Cardita canaliculata* Reeve, *C. cardioides* Reeve and *C. cumingi* Deshayes under the name *C. canaliculata*. LAMY, while regarding *C. cumingi* as a synonym of *C.* (*V.*) *canaliculata*, considers *C.* (*V.*) *cardioides* Reeve as distinct. He distinguishes this species by "sa forme plus globuleuse et par ses côtes crénelées plutôt convexes, séparées par des intervalles à fond arrondi".

Distribution: — *C.* (*V.*) *cardioides* was described from the Philippines.

The "Siboga" expedition collected mostly dead shells from the Bay of Bima (St. 47), Macassar (St. 71), Anchorage off the south point of Kabaëna Island (St. 209) and Banda Anchorage (St. 240).

7. *Cardita* (*Venericardia*) *pelseneeri* sp. nov. (Plate V, figs. 1, 2).

This new species, which I associate with the name of the distinguished malacologist, Dr. P. PELSENEER of Brussels, is closely allied to *Cardita* (*Venericardia*) *cardioides* Reeve. It is, however, easily distinguished from the latter species by its thinner, lighter and more quadrate shell; which is much less inflated, and has the umbones neither so tumid nor so prominent. The ridges on the shell are much finer, more regular and finely cut, and the beads on the ridges are more uniform and more numerous. The hinge is also more delicate. The shell is of a light yellow colour, with two or three transverse bars of a brownish tinge and a few splashes of the same colour in the umbonal region.

Measurements of Holotype: — Length 14 mm., height 14.5 mm., diameter 11.8 mm.

Habitat: — The Holotype was dredged by the "Siboga" Expedition at St. 260 (5° 36′.5 S. 132° 55′.2 E., 90 metres), while six other shells were collected on West side of Kwandang Bay Entrance (St. 116), Anchorage off Sawan, Siau Island (St. 125), St. 260 (5° 36.′5 S., 132° 55′.2 E., 90 metres), St. 310 (8° 30′ S., 119° 7′.5 E., 73 metres) and St. 321 (6° 5′.5 S., 113° 30′ E., 82 metres).

8. *Cardita* (*Glans*[2])) *echinaria* Mellvill & Standen.

1911. *Cardita echinaria* Melvill & Standen, Proc. Zool. Soc. London, p. 813, pl. LVI, fig. 8.
1911. *Cardita echinaria* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 38.

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1) SMITH, E. A. — "Challenger" Lamellibranchia, p. 211 (1885).

2) For definition etc. of *Glans* Megerle see COX, L. R. — Rept. Palaeontol. Zanzibar, p. 51 (1927), the genotype is *Cardita* (*Glans*) *trapezia* (Linn.).

LAMY [1]) rightly remarked that *Cardita* (*Glans*) *echinaria* appears to be allied to the Mediterranean species *C. aculeata* (Poli), but is distinguished by its quadrangular shell, which is somewhat sharply truncate posteriorly, and even though rounded at its anterior lower angle, its anterior margin appears almost as a straight line. MELVILL & STANDEN's measurements of the type specimen, which is now in the British Museum (Nat. Hist.), London are altogether inaccurate; these are: — Length 14.5 mm., height 13.4 mm., diameter 11 mm.

Distribution: — *C.* (*G.*) *echinaria* was described from the Persian Gulf.

In the "Siboga" collection the species is represented by a number of young shells and a large left valve (Length 21 mm., height 18.5 mm.). The various stations from which the species was collected are: — St. 49 (8° 20′.5 S., 119° 4′.5 E., 369 metres), St. 59 (10° 22′.7 S., 123° 16′.5 E., 390 metres), St. 65 (7° 0′ S., 120° 34′.5 E., 510 metres), St. 98 (6° 9′ N., 120° 21′ E., 350 metres), St. 105 (6° 8′ N., 121° 19′ E., 275 metres) and a dead left valve at Sulu.

Family TRAPEZIIDAE.

Genus **Glossocardia** Stoliczka.

1870. *Glossocardia* Stoliczka, Cretaceous Pelecypoda, S. India, p. 189.
1887. *Glossocardia* Fischer, P., Man. Conchyliol., p. 1075.
1920. *Glossocardia* Lamy, Journ. Conchyliol., LXIV, p. 268.

STOLICZKA proposed the new subgenus *Glossocardia* in 1870 for *Cypricardia obessa* Reeve [2]), the habitat of which was not known hitherto. STOLICZKA however, had received specimens of the species from Mauritius.

STOLICZKA's description of *Glossocardia* is very complete, while the hinge has been described by FISCHER and LAMY.

I consider *Glossocardia* to be of generic rank equal to *Trapezium* Megerle, as the hinge and form of the shell is so different in the species of the two genera.

1. *Glossocardia stoliczkana* sp. nov. (Plate VIII, figs. 15—18).

I associate this species with the name of the late Dr. F. STOLICZKA of the Geological Survey of India and author of the genus *Glossocardia*.

Species of a small size, shell elongated-trapezoid, ventricose, thin, inequilateral; narrowly rounded anteriorly, angulate and obliquely subtruncated posteriorly; ventral margin slightly arcuate; umbones prominent, tumescent; sculpture consisting of regular, close-set, microscopic concentric striae; posterior ridge well developed; hinge similar to that of *G. obessa* (Reeve) except that anterior cardinal in both valves is lamellar and not "bluntly tubercular". Shell of a dirty white colour.

Measurements of Holotype: — Length 20 mm., height 11.8 mm., diameter 9.6 mm.

Habitat: — The unique holotype of the species was dredged at St. 97 (5° 48′.7 N., 119° 49′.6 E., 564 metres).

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[1]) LAMY, E. — Journ. Conchyliol., LXVI, p. 254 (1922).

[2]) REEVE, L. — Conch. Icon., II, *Cypricardia*, pl. II, fig. 10 (1843).

Remarks: — *G. stoliczkana* resembles *G. obessa* Reeve, in shape, but the shell of the new species is much smaller, and more delicate, its anterior side is more produced, and the posterior ridge is sharper and better developed. The sculpture of *G. stoliczkana* is also much more regular.

Family ISOCARDIIDAE.

Genus **Isocardia** Lamarck.

1799. *Isocardia* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 86.
1807. *Isocardium* Link, Beschreib. Nat. Samm. Univ. Rostock, p. 153.
1811. *Bucardium* Megerle, Mag. Ges. Naturf. Freunde Berlin, V, p. 52.
1845. *Isocardia* Reeve, Conch. Icon., II, *Isocardia*, pl. I, (explanation).
1857. *Bucardia* Adams, H. & A., Gen. Rec. Moll., II, p. 461.
1868. *Tychocardia* Römer in Martini-Chemn. Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 5.
1887. *Isocardia* Fischer, P., Man. Conchyliol., p. 1073.
1900. *Isocardia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1064.
1920. *Isocardia* Lamy, Journ. Conchyliol., LXIV, p. 290.

For a detailed description of the genus *Isocardia* Lam. reference may be made to LAMY's work cited above. The genotype *Isocardia cor* (Linn.) = *Isocardia humana* (Linn.), was selected by CHILDREN [1]). *Isocardia s. s.*, is not represented in the "Siboga" collection, but the other subgenus *Meiocardia* H. & A. Adams [2]) — type *Isocardia* (*Meiocardia*) *lamarckii* Reeve is represented by four species.

1. *Isocardia* (*Meiocardia*) *moltkiana* Spengler.

1783. *Isocardia Moltkiana* Spengler, Schr. Berlin Ges. Naturf. IV, p. 321, pl. XIV, figs. 1—4.
1784. *Chama Moltkiana* etc., Chemnitz, Conch.-Cab., VII, p. 105, pl. XLVIII, figs. 484—487.
1788. *Chama Moltkiana* Schröter, Conch.-Cab. Namen Reg., p. 21.
1790. *Chama Moltkiana* Gmelin, Syst. Nat., (ed. XIII), p. 3303.
1802? *Cardita Moltkiana* Bosc, Hist. Nat. Coq., III, p. 87.
1845. *Isocardia Moltkiana* Reeve, Conch. Icon., II, *Isocardia*, pl. I, fig. 1.
1847. *Isocardia Moltkiana* Gray, Proc. Zool. Soc. London, p. 195.
1850. *Isocardia Moltkiana* Adams & Reeve, "Samarang" Moll., p. 77, pl. XXII, fig. 3.
1857. *Bucardia* (*Meiocardia*) *Moltkiana* Adams, H. & A., Gen. Rec. Moll., II, p. 461.
1860. *Isocardia Moltkiana* Reeve, Elem. Conch., II, p. 104.
1868. *Isocardia* (*Meiocardia*) *Moltkiana* Römer in Martini-Chemn. Conch.-Cab. (N. F.) X (2), *Carditacea*, p. 8, pl. I, figs. 4—7.
1869. *Meiocardia Moltkiana* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien. XIX, p. 884.
1878. *Isocardia* (*Meiocardia*) *Moltkiana* Kobelt, Illustr. Conchylienbuch, p. 347.
1881. *Meiocardia Moltkiana* de Rochebrune, Bull. Soc. Philomat. Paris, (7) VI, p. 13.
1882. *Isocardia Moltkiana* Dunker, Ind. Moll. Mar. Japon., p. 213.
1887. *Isocardia* (*Meiocardia*) *Moltkiana* Fischer, P., Man. Conchyliol., p. 1074.
1890. *Isocardia* (*Meiocardia*) *Moltkiana* Paetel, Cat. Conch. Samm., III, p. 120.
1891. *Isocardia* (*Meiocardia*) *Moltkiana* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 230.
1895. *Isocardia moltkiana* Pilsbry, Cat. Mar. Moll. Japan, p. 130.
1903. *Isocardia Moltkiana* Hidalgo, Obras Malacol., II, p. 363.

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1) CHILDREN, J. G. — Quart. Journ. Sci. Lit. Art., XIV. p. 317 (1822).
2) ADAMS, H. & A. — Gen. Rec. Moll., II, p. 461 (1857).

1905. *Isocardia Moltkiana* Hidalgo, Cat. Filip., p. 348.
1906. *Isocardia moltkiana* Owston, Japan. Loochooan Shells, p. 35.
1906. *Isocardia moltkiana* Bülow, Nachrichtsbl. Deutsch. Malakozool. Ges., XXXVIII, p. 37.
1909. *Isocardia moltkiana* Hedley, Proc. Linn. Soc. N. S. Wales, XXXIV, p. 430.
1909. *Isocardia* (*Meiocardia*) *moltkiana* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 130.
1910. *Isocardia moltkiana* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1920. *Isocardia* (*Meiocardia*) *moltkeana* Lamy, Journ. Conchyliol., LXIV, p. 297.
1928. *Isocardia moltkiana* Faustino, Summary Philippine Mar. Freshw. Moll., p. 65.

I. (*M.*) *moltkiana* is a very distinct species, of a small size, with the ribs much broader, coarser and distantly placed, and the ridge marking off the escutcheon much more strongly developed. The shell is also comparatively much thicker. I cannot agree with Römer (loc. cit., p. 8) that the only differences between *I.* (*M.*) *moltkiana* and *I.* (*M.*) *vulgaris* are the different size and the greater curvature of the ridges running forwards from the umbones in the former species. Lamy also is wrong in suggesting that the specimen figured as *I. moltkiana* by Reeve in "Conch. Icon." — pl. I, fig. 1 — does not represent the typical form; he proposed the varietal name *sanguineomaculata* Dunker for it.

Distribution: — The species was described from specimens of unknown habitat, but Chemnitz believed them to have come from the Eastern Seas. Reeve's specimens were from the Philippines and the species has also been recorded from the Australian waters.

The "Siboga" Expedition dredged two young shells on the bank between Islands of Bahuluwang and Tambolungan, South of Saleyer (St. 66).

2. *Isocardia* (*Meiocardia*) *vulgaris* Reeve.

1830. *Isocardia Moltkiana* Sowerby (non Spengler), Gen. Shells, II, *Isocardia*, fig. 3.
1837. *Isocardia Dussumieri* Valenciennes MSS. in Cuvier's Animal Kingdom, pl. XXXIII, figs. 2, 2*a*.
1845. *Isocardia vulgaris* Reeve, Conch. Icon., II, *Isocardia*, pl. I, figs. 2*a*, *b*.
1853. *Isocardia vulgaris* Mörch, Cat. Yoldi, II, p. 38.
1856. *Isocardia vulgaris* Hanley, Rec. Biv. Shells, p. 370, pl. XVIII, fig. 33.
1857. *Bucardia* (*Meiocardia*) *vulgaris* Adams, H. & A., Gen. Rec. Moll., II, p. 461.
1860. *Isocardia vulgaris* Reeve, Elem. Conch., II, p. 104.
1862. *Isocardia* (*Meiocardia*) *Moltkiana* Chenu, Man. Conchyliol., II, p. 113, fig. 533.
1867. *Isocardia vulgaris* Mitchell, Cat. Mus. Madras, p. 67.
1868. *Isocardia* (*Meiocardia*) *vulgaris* Römer in Martini-Chemn. Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 9, pl. I, figs. 8, 9.
1869. *Meiocardia vulgaris* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien XIX, p. 884.
1878. *Isocardia* (*Meiocardia*) *vulgaris* Kobelt, Illustr. Conchylienbuch, p. 347, pl. CII, fig. 11.
1884. *Isocardia* (*Meiocardia*) *Moltkiana* Tryon, Struct. Syst. Conch., III, p. 189, pl. CXIV, fig. 56.
1890. *Isocardia* (*Meiocardia*) *vulgaris* Paetel, Cat. Conch. Samm., III, p. 120.
1895. *Isocardia vulgaris* Cooke, Cambridge Nat. Hist., Moll., III, p. 451, fig. 305.
1896. *Isocardia vulgaris* Casto de Elera, Cat. Sist. Filip., p. 775.
1898. *Isocardia vulgaris* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 46.
1901. *Isocardia vulgaris* Sturany, Denkschrift. Kais. Akad. Wiss. Wien, Math. Nat., LXIX, p. 267.
1906. *Isocardia vulgaris* Bülow, Nachrichtsbl. Deutsch. Malakozool. Ges., XXXVIII, p. 37, pl. II, fig. 5.
1915. *Isocardia Moltkiana* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXI, p. 251.
1920. *Isocardia* (*Meiocardia*) *Moltkiana* var. *vulgaris* Lamy, Journ. Conchyliol., LXIV, p. 297.

The shell of *I.* (*M.*) *vulgaris* is not so high as that of *I.* (*M.*) *lamarcki*, but is more elongated in an antero-posterior direction. The umbones also are more curved forwards, downwards and later upwards; the posterior ridge limiting the escutcheon is sharper and the ribbing closer.

Distribution: — *I.* (*M.*) *vulgaris* appears to be the common Indo-Pacific species of the genus.

The "Siboga" Expedition obtained a few dead valves in a trawl in the Madura Strait (St. 2, 56 metres).

3. *Isocardia* (*Meiocardia*) *lamarcki* Reeve.

1792. *Cardita Moltkiana* Bruguière (non Spengler), Encyclopéd. Méthod., p. 404.
1797. Bruguière, Encyclopéd Méthod., pl. CCXXXIII, figs. 1*a*—*d*.
1801. *Isocardia Moltkiana* Lamarck, Syst. Anim. sans Vertèb., p. 118.
1805. *Isocardia Moltkiana* De Roissy in Buffon, Hist. Nat. Moll., VI, p. 384.
1817. *Chama Moltkiana* Dillwyn, Descr. Cat., I, p. 213.
1819. *Isocardia Moltkiana* Lamarck, Anim. sans Vertèb., VI, p. 31.
1822. *Isocardia Moltkiana* Blainville, Dict. Sci. Nat., XXIV, p. 17.
1825. *Isocardia Moltkiana* Sowerby, Cat. Tankerville, p. 18.
1825. *Chama Moltkiana* Wood, Ind. Test., p. 42, pl. IX, fig. 5.
1830. *Isocardia Moltkiana* Deshayes, Encyclopéd. Méthod., II, p. 322.
1835. *Isocardia Moltkiana* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 447.
1841. *Isocardia Moltkiana* Reeve, Conch. Syst., I, p. 101, pl. LXXVIII, fig. 2.
1843. *Chama Moltkiana* Hanley, Rec. Biv. Shells, p. 150.
1845. *Isocardia Lamarckii* Reeve, Conch. Icon., II, *Isocardia*, pl. I, fig. 5.
1845. *Isocardia Lamarckii* Catlow & Reeve, Conch. Nomencl., p. 45.
1853. *Isocardia Lamarckii* Mörch, Cat. Yoldi, II, p. 38.
1856. *Isocardia Lamarckii* Hanley, Rec. Biv. Shells, Appendix, p. 370, pl. XVIII, fig. 3, 4.
1857. *Bucardia* (*Meiocardia*) *Lamarckii* Adams, H. & A., Gen. Rec. Moll., II, p. 461.
1860. *Isocardia Lamarckii* Reeve, Elem. Conch., II, p. 104.
1868. *Isocardia* (*Meiocardia*) *vulgaris* var. *Lamarckii*, Römer in Martini-Chemn. Conch.-Cab. (N.F.), X (2), *Cardiacea*, p. 9.
1878. *Isocardia* (*Meiocardia*) *Lamarckiana* Kobelt, Illustr. Conchylienbuch, p. 347.
1884. *Isocardia Lamarckii* Grasset, Ind. Test. Viv., p. 273.
1890. *Isocardia* (*Meiocardia*) *vulgaris* var. *Lamarcki* Paetel, Cat. Conch. Samm., III, p. 120.
1903. *Meiocardia lamarckii* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 625.
1906. *Isocardia* (*Meiocardia*) *lamarckii* Melvill & Standen, Proc. Zool. Soc. London, p. 814.
1906. *Isocardia lamarcki* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 292.
1911. *Isocardia lamarcki* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVII, p. 132.
1911. *Isocardia lamarcki* Pelseneer, "Siboga" Lamellibranches (Anat.), pl. XVIII, fig. 1.
1920. *Isocardia* (*Meiocardia*) *Moltkiana* var. *Lamarcki* Lamy, Journ. Conchyliol., LXIV, p. 298.

The distinguishing characters of *I.* (*M.*) *lamarcki* from *I.* (*M.*) *vulgaris* have been discussed under the latter species. It is, however, possible that with more material it may have to be regarded as a variety of *I.* (*M.*) *vulgaris*.

Distribution: — The range of *I.* (*M.*) *lamarcki* is similar to that of *I.* (*M.*) *vulgaris*.

The "Siboga" Expedition dredged a few young valves of this species in the western entrance of the Samau Strait (St. 59, 390 metres).

4. *Isocardia* (*Meiocardia*) *tetragona* Adams & Reeve. (Plate V, figs. 3, 4).

1850. *Isocardia tetragona* Adams & Reeve, "Samarang" Moll., p. 76, pl. XXII, fig. 1.
1857. *Isocardia* (*Meiocardia*) *tetragona* Adams, H. & A., Gen. Rec. Moll., II, p. 461.
1860. *Isocardia tetragona* Reeve, Elem. Conch., II, p. 104.

1868. *Isocardia* (*Meiocardia*) *tetragona* Römer in Martini-Chemn. Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 10.
1882. *Isocardia tetragona* Dunker, Ind. Moll. Mar. Japon., p. 213.
1884. *Isocardia tetragona* Grasset, Ind. Test. Viv., p. 273.
1890. *Isocardia* (*Meiocardia*) *tetragona* Paetel, Cat. Conch. Samm., III, p. 120.
1895. *Isocardia tetragona* Pilsbry, Cat. Mar. Moll. Japan, p. 130.
1906. *Isocardia tetragona* Owston, Japan. Loochooan Shells, p. 35.
1920. *Isocardia* (*Meiocardia*) *tetragona* Lamy, Journ. Conchyliol., LXIV, p. 300.

The shells of *I.* (*M.*) *tetragona* are quadrate, being much longer than high. The posterior ridge is neither very sharp nor very raised in the adult shells, and the sculpture consists of somewhat irregular, distantly placed, concentric ribs. I figure a full-grown shell from the "Siboga" collection.

Distribution: — *I.* (*M.*) *tetragona* has so far been recorded from round Japan.

The "Siboga" dredged several shells on the Bank between the Islands of Bahuluwang and Tambolungan, south of Saleyer (St. 66), St. 95 (5° 43′.5 N., 119° 40′ E., 522 metres) and St. 105 (6° 8′ N., 121° 19′ E., 275 metres).

Family VESICOMYIDAE.

Genus **Vesicomya** Dall.

1886. *Vesicomya* Dall, Bull. Mus. Comp. Zool. Harvard, XII, p. 272.
1900. *Vesicomya* Smith, Proc. Malacol. Soc. London, IV, pp. 81—83, fig. 11.
1920. *Vesicomya* Lamy, Journ. Conchyliol., LXIV, p. 302.

DALL introduced the name *Vesicomya* in a subgeneric sense with *Callocardia* (*Vesicomya*) *atlantica* Smith as the type. SMITH in the paper cited, described and figured the hinge of *V. lepta*, and published a list of the species which should be separated under the generic name *Vesicomya*.

1. *Vesicomya solidissima* sp. nov. (Plate IX, figs. 1—4).

The following is a description of this new species: — Species of a large size, shell elongate-ovate, very inequilateral, greatly swollen; white; anterior side narrow, rounded; posterior broadly rounded; ventral margin somewhat arcuate; umbones moderately prominent, incurved, subcontiguous, situated at about $^1/_4$ of total length from anterior margin; lunule very prominently marked, cordate, carinated in the middle; sculpture consisting of concentric, low striae running obliquely upwards from about the middle; hinge normal *Vesicomya*-type. Colour of shell dull yellow; inner surface chalky white.

Measurements of Holotype: — Length 65 mm., height 42.5 mm., diameter 40.5 mm.

Habitat: — The unique Holotype was brought up in a deep-sea trawl at St. 18 (7° 28′.2 S., 115° 24′.6 E., 1018 metres).

Remarks: — *V. solidissima* is very closely allied to *V. indica* Smith 1), but is easily distinguished by its much more elongate and more swollen shell and the very narrow, rounded anterior side.

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1) SMITH, E. A. — Ann. Mag. Nat. Hist., (7) XIV, p. 9 (1904), and Illustr. Zool. "Investigator", Moll., pl. XVII, figs. 4, 4*a*—*c* (1907).

2. *Vesicomya compressa* sp. nov. (Plate V, figs. 5, 6).

Vesicomya compressa is very closely allied to *V. brevis* Smith [1]) from the Arabian Sea, but is easily distinguished by its shell being much more compressed and not so inflated, its less prominent umbones; the upper margin of the shell is much more curved, the posterior margin more rounded and more delicate concentric sculpture.

Measurements of the Holotype: — Length 35.9 mm., height 27.2 mm., diameter 12.8 mm.

Habitat: — The unique Holotype of the species was brought up in a deep-sea trawl at St. 18 (7° 28′.2 S., 115° 24′.6 E., 1018 metres).

3. *Vesicomya winckworthi* sp. nov. (Plate V, figs. 7, 8).

The following is a description of this new species: species of a large size; shell ovate-trigonal, subrostrate; umbones prominent, prosogyrate, lunule impressed, not well defined; escutcheon marked off by a broad ridge running from umbo to ventro-posterior angle of shell; anterior end rounded above, subtruncate below; posterior end narrowly rounded to a point; ventral margin very arcuate; surface sculptured with very thin concentric striae, lines of growth indicated in some places; hinge normal; pallial sinus well marked. Shell of a dirty white colour.

Measurements of unique right valve: — Length 64 mm., height 45.5 mm., diameter 6.5 mm.

Habitat: — A single right valve, the Holotype, was brought up in a deep-sea trawl at "Siboga" St. 17 (7° 28′.5 S., 115° 28′ E., 1060 metres).

Remarks: — I would not have described this new species from a single right valve, but for the very peculiar shape and the very interesting locality whence the unique valve was obtained. The species is associated with the name of my friend Mr R. Winckworth, who has done so much to clear up the very confused state of the nomenclature of the Indian marine mollusca.

Family Lucinidae.

Genus **Lucina** Lamarck.

1799. *Lucina* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 84.
1807. *Anodontina* Link, Beschreib. Nat. Samm. Univ. Rostock, p. 156.
1822. *Lucina* Children, Quart. Journ. Lit. Sci. Arts, XIV, p. 322.
1850. *Lucina* Reeve, Conch. Icon., VI, *Lucina* pl. I (explanation).
1857. *Lucina* Adams, H. & A., Gen. Rec. Moll., II, p. 466.
1887. *Lucina* Fischer, P., Man. Conchyliol., p. 1142.
1901. *Lucina* Dall, Proc. U. S. Nat. Mus., XXIII, p. 801.
1903. *Lucina* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1351.
1920. *Lucina* Lamy, Journ. Conchyliol., LXV, p. 77.
1925. *Lucina* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 111.
1930. *Lucina* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, III, p. 175.

Since Bruguière's name published in 1797 as a legend on certain plates of "Encycloped. Méthod." cannot be accepted, Lamarck (1799) must be taken as the author of the genus *Lucina*.

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[1]) Smith, E. A. — Ann. Mag. Nat. Hist., (7) XVIII, p. 261 (1906) and Illustr. Zool. "Investigator", Moll., pl. XX, figs. 7, 8 (1908).

The genotype, by monotypy, is *Lucina edentula* (Linn.). I cannot agree with Stewart's suggestion that *Lucina s. s.* equals *Here* Gabb.

1. *Lucina edentula* (Linn.).

1758. *Venus edentula* Linnaeus, Syst. Nat., (ed. X), p. 689.
1764. *Venus edentula* Linnaeus, Mus. Lud. Ulr., p. 508.
1767. *Venus edentula* Linnaeus, Syst. Nat., (ed. XII), p. 1135.
1845. *Lucina edentula* Philippi, Zeitschr. Malakozool., II, p. 179.
1847. *Lucina edentula* Philippi, Abbild. Beschreib. Conch., II, p. 205, *Lucina*, pl. I, fig. 1.
1850. *Lucina ovum, Philippiana* and *L. pila* Reeve, Conch. Icon., VI, *Lucina*, pl. V, figs. 21, 24, 25.
1853. *Lucina edentula* Philippi, Handbuch Conch. Malacol. p. 342.
1853. *Loripes edentula* Mörch, Cat. Yoldi, II, p. 32.
1855. *Venus edentula* Hanley, Ipsa Linn. Conch., p. 78.
1857. *Venus edentula* Römer, Krit. Untersuch., p. 99.
1857. *Loripes edentula* Adams, H. & A., Gen. Rec. Moll., II, p. 469.
1860. *Lucina Philippiana* Reeve, Elem. Conch., II, p. 123.
1872. *Loripes Philippiana* Tryon, Proc. Acad. Nat. Sci. Philadelphia, XXIV, p. 90.
1882. *Lucina edentula* Dunker, Ind. Moll. Mar. Japon., p. 216, pl. VIII, figs. 7, 8.
1887. *Lucina* (*Anodontina*) *edentula* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 173.
1888. *Loripes globosus* Jousseaume (non Forskål), Mém. Soc. Zool. France, I, p. 210.
1889. *Axinus globosus* Sowerby (non Forskål), Journ. Conch., VI, p. 157.
1890. *Loripes edentulus* Paetel, Cat, Conch. Samm., III, p. 127.
1892. *Lucina* (*Loripes*) *edentula* Böttger, O., Nachrichtsbl. Deutsch. Malakozool. Ges., XXIV, p. 168.
1896. *Lucina Philippiana* Casto de Elera, Cat. Sist. Filip., p. 778.
1897. *Lucina edentula* von Martens, Weber's Zool. Ergebn. Reise Ost. Ind., IV, Süss., Brackw. Moll., p. 229, pl. XI, figs. 1, 2.
1905. *Lucina Philippiana* Hidalgo, Cat. Filip., p. 354.
1909. *Lucina* (*Thyasira*) *edentula* and *L.* (*T.*) *ovum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, pp. 167, 168.
1910. *Lucina edentula* Hedley, Austral. Ass. Adv. Sci., XII, p. 347.
1915. *Lucina globosa* Bartsch (non Forskål), Bull. U. S. Nat. Mus., XCI, p. 194.
1915. *Lucina edentula* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXI, p. 134.
1916. *Lucina edentula* f. *ovum*, Lamy, Bull. Mus. d'Hist. Nat. Paris XXII, p. 145.
1920. *Lucina edentula* vars. *ovum*, *Philippiana* and *pila* Lamy, Journ. Conchyliol., LXV, pp. 78—80.
1928. *Lucina ovum* and *L. philippiana* Faustino, Summary Philippine Mar. Freshw. Moll., p. 53.
1929. *Lucina edentula* Dautzenberg, Faun. Colon. Francais., III, p. 621.

In view of Hanley's observations on the shells of this species in the Linnaean Cabinet, there can be little doubt that the Linnaean species was from the Indo-Pacific Region. The species was described and figured by Reeve under the names *ovum*, *philippiana* and *pila*; his *edentula*, as Dall [1]) rightly inferred, is *L. chrysostoma* Philippi.

The species is well figured by von Martens in his account of the fresh and brackish water molluscs of the Dutch East Indies.

Distribution: *L. edentula* has a wide range in the Indo-Pacific.

In the "Siboga" collection there are only young shells of the species from near the reef of Batjulmati, Java (St. 7), Pulu Kaniungan Ketjil (St. 89) and Anchorage off Beo, Karakelang Islands (St. 131).

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1) Dall, W. H. — Proc. U. S. Nat. Mus., XXIII, p. 802 (1901).

Genus **Codakia** Scopoli.

1777. *Codakia* Scopoli, Intr. Hist. Nat., p. 398.
1817. *Lentillaria* Schumacher, Essai Nouv. Syst., p. 147.
1847. *Lenticularia* Gray, Proc. Zool. Soc. London, p. 196.
1857. *Codakia* Adams, H. & A., Gen. Rec. Moll., II, p. 467.
1869. *Jugonia* Récluz, Mélang. Malacol., p. 14.
1887. *Codokia* Fischer, P., Man. Conchyliol., p. 1143.
1901. *Codakia* Dall, Proc. U. S. Nat. Mus., XXIII, p. 797.
1903. *Codakia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1344.
1921. *Codokia* Lamy, Journ. Conchyliol., LXV, p. 233.
1925. *Codakia* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 107.

There is some difficulty about the identification of *Chama codok* Adanson, which is the type of the genus *Codakia* Scopoli. Most authors have identified the species with *Codakia punctata* (Linn.), but as ADANSON's species was from Sénégal, it would probably be better to accept with LAMY, *C. orbicularis* (Linn.) as the genotype of *Codakia*.

1. *Codakia punctata* (Linn.).

1741. *Chama pectinata* Rumph, Amboin. Rarit., p. 139, pl. XLIII, fig. D.
1742. *Concha pectiniformis* etc. Gualtieri, Ind. Test., pl. LXXV, fig. D.
1758. *Venus punctata* Linnaeus, Syst. Nat., (ed. X), p. 688.
1764. *Venus punctata* Linnaeus, Mus. Lud. Ulr., p. 505.
1767. *Venus punctata* Linnaeus, Syst. Nat., (ed. XII), p. 1134.
1784. *Venus punctata Linnaei* Chemnitz, Conch. Cab., VII, p. 15, pl. XXXVII, figs. 397, 398.
1788. *Venus punctata* Schröter, Conch. Cab. Namen Reg., p. 112.
1790. *Venus punctata* Gmelin, Syst. Nat., (ed. XIII), p. 3284.
1802. *Venus punctata* Bosc, Hist. Nat. Coq., III, p. 61.
1817. *Venus punctata* Dillwyn, Descr. Cat., I, p. 194.
1817. *Lentillaria punctata* Schumacher, Essai Nouv. Syst., p. 148, pl. XV, figs. 4*a*, *b*.
1818. *Cytherea punctata* Lamarck, Anim. sans Vertèb., V, p. 574.
1824. *Cytheria* (sic) *punctata* Dubois, Epitome, p. 70.
1825. *Lucina punctata* Sowerby, Cat. Tankerville, p. 11.
1828. *Venus punctata* Blainville Dict. Sci. Nat., LVII, p. 269.
1830. *Lucina punctata* Sowerby, Gen. Shells, II, *Lucina*, fig. 1.
1831. *Lucina punctata* Deshayes, Encycloped. Méthod., II, p. 385.
1835. *Cytherea punctata* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 319.
1840. *Cytherea punctata* Pfeiffer, Krit. Reg., p. 65.
1841. *Lucina punctata* Reeve, Conch. Syst., I, p. 82, pl. LIX, fig. 1.
1843. *Lucina Punctata* Hanley, Rec. Biv. Shells, p. 77.
1844. *Cytherea punctata* Potiez & Michaud, Gal. Douai, p. 223.
1845. *Lucina punctata* Catlow & Reeve, Conch. Nomencl., p. 27.
1847. *Lenticularia punctata* Gray, Proc. Zool. Soc. London, p. 196.
1847. *Cytherea Punctata* Chenu, Illustr. Conchyliol., *Cytherea*, pl. XI, figs. 3, 3*a*, *b*.
1850. *Lucina punctata* Reeve, Conch. Icon., VI, *Lucina*, pl. 1, fig. 2.
1853. *Codakia punctata* Mörch, Cat. Yoldi, II, p. 33.
1855. *Venus punctata* Hanley, Ipsa Linn. Conch., p. 75.
1856. *Venus punctata* Hanley in Wood, Ind. Test., p. 48, pl. VIII, fig. 81.
1857. *Lucina* (*Codakia*) *punctata* Adams, H. & A., Gen. Rec. Moll., II, p. 467.
1858. *Lucina punctata* Fischer, P., Journ. Conchyliol., III, p. 337.
1860. *Lucina punctata* Reeve, Elem. Conch., II, p. 123, pl. XXXVII, fig. 204.
1863. *Lucina punctata* Deshayes, Cat. Moll. Réunion, p. 19.

1869. *Lucina* (*Codakia*) *punctata* Dunker, Cat. Mus. Godeffroy, IV, p. 113.
1872. *Lucina punctata* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (I), *Cyprina*, etc., p. 262, pl. XIX, figs. 8, 9.
1879. *Lucina punctata* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 742.
1880. *Lucina* (*Lentillaria*) *punctata* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 321.
1884. *Lucina punctata* Grasset, Ind. Test. Viv., p. 279.
1889. *Lucina punctata* Morlet, L., Journ. Conchyliol., XXXVII, p. 173.
1890. *Lucina* (*Codakia*) *punctata* Paetel, Cat. Conch. Samm., III, p. 126.
1891. *Lucina punctata* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, p. 244.
1893. *Lucina punctata* Dautzenberg, Bull. Soc. Zool. France, XVIII, p. 84.
1899. *Lucina punctata* Hedley, Mem. Austral. Mus., III, pp. 496, 528.
1905. *Lucina punctata* Hidalgo, Cat. Filip., p. 354.
1906. *Loripes* (*Codokia*) *punctatus* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 212.
1906. *Lucina punctata* Owston, Japan. Loochooan shells. p. 36.
1909. *Lucina* (*Codakia*) *punctata* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 130.
1909. *Lucina* (*Codakia*) *punctata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V. p. 169.
1911. *Lucina punctata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 130.
1915. *Lucina punctata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXI, p. 160.
1921. *Codokia punctata* Lamy, Journ. Conchyliol., LXV, p. 244.
1928. *Lucina punctata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 54.
1929. *Codokia punctata* Dautzenberg, Faun. Colon. Français., III, p. 622.

This wide-spread Indo-Pacific species is represented in the "Siboga" collection by a single shell collected at Saleyer Anchorage (St. 213).

2. *Codakia tigerina* (Linn.).

1741. *Chama granosa* Rumph, Amboin. Rarit., p. 140, pl. XLIII, fig. H.
1742. *Concha marina* etc. Gualtieri, Ind. Test. pl. LXXVII, fig. A, A.
1758. *Venus tigerina* Linnaeus, Syst. Nat., (ed. X), p. 688.
1764. *Venus tigerina* Linnaeus, Mus. Lud. Ulr., p. 503.
1797. Bruguière, Encyclopéd. Méthod., pl. CCXXVII, fig. 4*a*, *b*.
1818. *Cytherea tigerina* Lamarck (ex parte), Anim. sans Vertèb., p. 584.
1831. *Cytherea tigerina* Deshayes, Encyclopéd. Méthod., II, p. 384.
1835. *Cytherea tigerina* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 574.
1844. *Cytherea tigerina* Potiez & Michaud, Gal. Douai, II, p. 230.
1850. *Lucina exasperata* Reeve, Conch. Icon., VI, *Lucina*, pl. 1, fig. 4.
1855. *Venus tigerina* Hanley, Ipsa Linn. Conch., p. 73.
1857. *Lucina* (*Codakia*) *exasperata* and *L.* (*C.*) *tigerina* Adams, H. & A., Gen. Rec. Moll., II, 468.
1860. *Lucina exasperata* and *L. tigerina* Reeve, Elem. Conch., II, p. 122.
1862. *Lucina* (*Codakia*) *exasperata* Chenu, Man. Conchyliol., II, p. 120, figs. 578, 580.
1863. *Lucina tigerina* Deshayes, Cat. Moll. Réunion, p. 19.
1870. *Codakia exasperata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1872. *Lucina* (*Codakia*) *tigerina* Tryon, Proc. Acad. Nat. Sci. Philadelphia, XXIV, p. 27.
1874. *Lucina* (*Codakia*) *exasperata* Dunker, Cat. Mus. Godeffroy, V, p. 172.
1880. *Lucina* (*Lentillaria*) *tigrina* (sic) von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 321.
1884. *Lucina exasperata* and *L. tigerina* Grasset, Ind. Test. Viv., p. 279.
1884. *Lucina* (*Codakia*) *exasperata* Smith, Rept. Voy. "Alert", p. 507.
1886. *Lucina exasperata* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 99.
1890. *Lucina* (*Codakia*) *exasperata* and *L.* (*C.*) *tigerina* Paetel, Cat. Conch. Samm., III, p. 125.

1891. *Lucina* (*Codakia*) *exasperata* Smith, Proc. Zool. Soc. London, p. 429.
1893. *Lucina exasperata* Dautzenberg, Bull. Soc. Zool. France, XVIII, p. 84.
1896. *Lucina* (*Codakia*) *exasperata* Casto de Elera, Cat. Sist. Filip., p. 779.
1897. *Lucina exasperata* Sowerby, Mar. Shells S. Africa, Supplement, p. 26.
1898. *Lucina* (*Codakia*) *exasperata* Melvill & Sykes, Proc. Zool. Soc. London, p. 46.
1899. *Lucina* (*Codakia*) *exasperata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 200.
1899. *Lucina exasperata* Hedley, Mem. Austral. Mus., III, p. 496.
1900. *Codakia exasperata* Newton, Geol. Mag., VII. p. 552.
1901. *Lucina tigerina* Dall, Proc. U. S. Nat. Mus., XXIII, p. 798.
1902. *Lucina exasperata* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1905. *Lucina exasperata* Hidalgo, Cat. Filip., p. 353.
1906. *Codakia exasperata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 465.
1906. *Loripes* (*Codokia*) *exasperata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 212.
1906. *Lucina exasperata* Owston, Japan. Loochooan Shells, p. 36.
1906. *Lucina* (*Codakia*) *exasperata* Melvill & Standen, Proc. Zool. Soc. London, p. 815.
1909. *Lucina* (*Codokia*) *exasperata* Lamy, Mém. Soc. Zool. France, XXII, p. 344.
1910. *Codakia exasperata* Hedley, Austral. Ass. Adv. Sci., XII, p. 347.
1915. *Cytherea tigerina* Lamy (ex parte), Bull. Mus. d'Hist. Nat. Paris, XXI, p. 159.
1916. *Codokia tigerina* and *C. Gaulterii* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXII, p. 183.
1921. *Codokia tigerina* Lamy, Journ. Conchyliol., LXV, p. 239.
1928. *Lucina exasperata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 53.
1929. *Codokia tigerina* Dautzenberg, Faun. Colon. Francais., III, p. 623.

The common Indo-Pacific species which was figured and described as *Lucina exasperata* by Reeve, is, as has been rightly pointed out by Dall and Lamy, synonymous with *Codakia tigerina* (Linn.). Reeve's *C. tigerina* (op. cit., pl. I, fig. 3) is, however, *C. orbicularis* (Linn.).

The suborbicular and somewhat swollen shell of this species is much more curved along the anterior than the posterior dorsal margin. The surface of the valves is covered by moderately raised concentric and radial ridges, which produce a decussated pattern and at their points of intersection small, elongated nodular areas.

Distribution: — *C. tigerina* is a widely distributed species of the Indo-Pacific Region.

In the "Siboga" collection there is a single shell of the species collected at the Anchorage off Kilsuin, west coast of Kur Island (St. 250).

3. *Codakia divergens* (Philippi).

1850. *Lucina divergens* Philippi, Abbild. Beschreib. Conch., III, p. 103, *Lucina*, pl. II, fig. 4.
1850. *Lucina fibula* Reeve, (ex parte), Conch. Icon., VI, *Lucina*, pl. VII, figs. 37, 38.
1850. *Lucina fibula* Adams & Reeve, Zool. Voy. "Samarang", Moll., p. 80, pl. XXIV, fig. 5.
1850. *Lucina ramulosa* Gould, Proc. Boston Soc. Nat. Hist., III, p. 255.
1852. *Lucina ramulosa* Gould, U. S. Explor. Exped., Moll., p. 415, pl. XXXVI, figs. 523, 523*a*, *b*.
1856. *Lucina* (*Codakia*) *munda* Adams, A., Proc. Zool. Soc. London (vol. for 1855), p. 225.
1857. *Lucina* (*Codakia*) *fibula* Adams, H. & A., Gen. Rec. Moll., II, p. 468.
1858. *Lucina fibula* Fischer, P., Journ. Conchyliol., VII, p. 337.
1860. *Lucina fibula* Reeve, Elem. Conch., II, p. 123.
1861. *Lucina fibula* Dunker, Moll. Japon., p. 28.
1862. *Lucina* (*Codakia*) *ramulosa*, Gould, Otia Conch.. pp. 82, 246.
1863. *Lucina Reevei*, *L. minuata* and *L. fibula* Deshayes, Cat. Moll. Réunion, p. 19, pl. III, figs. 8, 9, p. 20, pl. III, figs. 4—7.
1869. *Lucina Reevei* Issel, Malacol. Mar. Rosso, pp. 83, 225.
1869. *Lucina* (*Codakia*) *fibula* Dunker, Cat. Mus. Godeffroy, IV, p. 113.

1869. *Codakia fibula* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 884.
1870. *Codakia Reevei* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1871. *Lucina divergens* von Martens & Langkavel, Donum Bismarckianum, pp. 63, 68.
1871. *Lucina divergens* Lischke, Japan. Meeresconch., II, p. 132.
1874. *Lucina divergens* Lischke, Japan. Meeresconch., III, p. 106.
1874. *Lucina divergens* von Martens, Vorderasiat. Conch., pp. 103, 105.
1877. *Lucina (Codakia) fibula* Angas, Proc. Zool. Soc. London, p. 192.
1877. *Lucina fibula* Liénard, Cat. Ile Maurice, p. 65.
1879. *Lucina fibula* Smith, Phil. Trans. Roy. Soc. London, LI, p. 476.
1880. *Lucina (Lentillaria) divergens, L. (L.) Reevei* and *L. (L.) minuta* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 321.
1882. *Lucina (Codakia) divergens* Dunker, Ind. Moll. Mar. Japon., p. 216.
1886. *Lucina fibula* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 99.
1887. *Lucina (Lentillaria) divergens* von Martens, Journ. Linn. Soc. London (Zool.) XXI, p. 209.
1890. *Lucina (Codakia) divergens, L. (C.) ramulosa* and *L. minuta* Paetel, Cat. Conch. Samm., III, pp. 125, 126.
1890. *Lucina fibula* Smith, Proc. Zool. Soc. London, p. 314.
1895. *Lucina divergens* Pilsbry, Cat. Mar. Moll. Japan, p. 133.
1899. *Lucina divergens* Hedley, Mem. Austral. Mus., III, p. 497.
1899. *Lucina fibula* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 200.
1900. *Codakia fibula* Newton, Geol. Mag., VII, p. 552.
1901. *Lucina fibula* Sturany, Denkschrift. Kais. Akad. Wiss. Wien, Math. Nat., LXIX, p. 285.
1905. *Lucina delicatula* Pilsbry, Proc. Acad. Nat. Sci. Philadelphia, LVI, p. 555, pl. XLI, figs. 15, 16.
1906. *Lucina (Codakia) fibula* Melvill & Standen, Proc. Zool. Soc. London, p. 815.
1906. *Codokia fibula* and *C. delicatula* Owston, Japan. Loochooan Shells, p. 36.
1906. *Lucina (Codokia) divergens* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 212.
1909. *Lucina Reevei* Hedley, Proc. Linn. Soc. N. S. Wales, XXXIV, p. 426.
1909. *Lucina (Codakia) divergens* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 170.
1910. *Codakia Reevei* Hedley, Austral. Ass. Adv. Sci., XII, p. 347.
1916. *Codokia (Jugonia) divergens* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXII, p. 184.
1918. ? *Codakia bella* Hedley, Journ. Roy. Soc. N. S. Wales, LI, p. 18.
1921. *Codokia divergens* Lamy, Journ. Conchyliol., LXV, p. 254.
1928. *Lucina fibula* Faustino, Summary Philippine Mar. Freshw. Moll., p. 53.
1929. *Codokia (Jugonia) divergens* Dautzenberg, Faun. Colon. Francais., III, p. 623.

DALL (1) considers *Lucina bella* Conrad as a synonym of *C. divergens*, but this, in view of CONRAD's definite statement of its habitat as San Diego, California, can hardly be accepted as correct.

Distribution: — *C. divergens* is widely distributed in the Indo-Pacific; a detailed list of the places whence it has been recorded, was published by LYNGE.

In the "Siboga" collection there are two young, greatly worn valves collected in the Bay of Bima (St. 47) and on the Bank between the Islands of Bahuluwang and Tambolungan, south of Saleyer (St. 66).

4. *Codakia interrupta* (Lamarck).

1818. *Cytherea interrupta* Lamarck, Anim. sans Vertèb., V, p. 574.
1828. *Venus interrupta* Blainville, Dict. Sci. Nat., LVII, p. 269.
1835. *Cytherea interrupta* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 318.

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1) DALL, W. H. — Proc. U. S. Nat. Mus., XXIII, p. 798 (1901).

1839. *Lucina interrupta* Gray, Voy. "Beechey", p. 154, pl. XLIV, fig. 3.
1843. *Lucina Tigerina* var. *interrupta* Hanley, Rec. Biv. Shells, p. 78.
1847. *Cytherea Interrupta* Chenu, Illustr. Conchyliol., *Cytherea*, pl. XI, figs. 1, 1 *a*, *b*.
1850. *Lucina interrupta* Reeve, Conch. Icon., VI, *Lucina*, pl. II, figs. 5 *a*, *b*.
1857. *Lucina* (*Codakia*) *interrupta* Adams, H. & A., Gen. Rec. Moll., II, p. 468.
1860. *Lucina interrupta* Reeve, Elem. Conch., II, p. 123.
1869. *Lucina* (*Codakia*) *interrupta* Dunker, Cat. Mus. Godeffroy, IV, p. 113.
1869. *Lucina tigerina* var. Pfeiffer in Martini-Chemn. Conch.-Cab. (N. F.), XI (I) *Cyprina* etc., p. 261.
1870. *Codakia interrupta* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1885. *Lucina* (*Codakia*) *interrupta* Smith, "Challenger" Lamellibranchia, p. 179.
1886. *Lucina interrupta* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 99.
1890. *Lucina* (*Codakia*) *interrupta* Paetel, Cat. Conch. Samm., III, p. 125.
1896. *Lucina* (*Codakia*) *interrupta* Casto de Elera, Cat. Sist. Filip., p. 779.
1899. *Lucina* (*Codakia*) *interrupta* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 200.
1901. *Lucina interrupta* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math. Nat., LXIX, p. 285.
1905. *Lucina interrupta* Hidalgo, Cat. Filip., p. 354.
1906. *Lucina interrupta* Owston, Japan. Loochooan Shells, p. 36.
1906. *Codakia interrupta* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 465.
1909. *Lucina interrupta* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 469.
1909. *Lucina* (*Codakia*) *interrupta* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 130.
1910. *Codakia interrupta* Hedley, Austral. Ass. Adv. Sci., XII, p. 347.
1915. *Cytherea interrupta* Lamy, Bull. Soc. d'Hist. Nat. Paris, XXI, p. 159.
1916. *Codakia interrupta* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 12.
1921. *Codokia interrupta* Lamy, Journ. Conchyliol., LXV, p. 242.
1928. *Lucina interrupta* Faustino, Summary Philippine Mar. Freshw. Moll., p. 53.

C. interrupta is closely allied to *C. rugifera* Reeve, but its shell is more inflated and the decussate sculpture is less strongly developed.

Distribution: — *C. interrupta* has a wide range in the Indo-Pacific.

In the "Siboga" collection there is a single shell of the species collected at Banda Anchorage (St. 240).

Genus **Myrtea** Turton.

1822. *Myrtea* Turton, Conch. Insul. Brit., p. 133.
1857. *Myrtea* Adams, H. & A., Gen. Rec. Moll., II, p. 468.
1887. *Myrtea* Fischer, P., Man. Conchyliol., p. 1143.
1901. *Myrtaea* Dall, Proc. U. S. Nat. Mus., XXIII, p. 804.
1903. *Myrtaea* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1356.
1920. *Myrtea* Lamy, Journ. Conchyliol., LXV, p. 217.
1930. *Myrtea* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰. 3, p. 187.

I am not quite certain whether Reeve's *Lucina fabula* is rightly assigned to the genus *Myrtea*. This species agrees in general with the description of the genus, but the hinge is slightly different, and it may later have to be separated from the genus *Myrtea*.

The genotype is *Myrtea spinifera* (Montagu).

1. *Myrtea fabula* (Reeve).

1850. *Lucina fabula* Reeve, Conch. Icon., VI, *Lucina*, pl. XI, fig. 69.
1857. *Lucina* (*Myrtea*) *fabula* Adams, H. & A., Gen. Rec. Moll., II, p. 468.

1860. *Lucina fabula* Reeve, Elem. Conch., II, p. 123.
1890. *Lucina* (*Myrtea*) *fabula* Paetel, Cat. Conch. Samm., III, p. 125.
1896. *Lucina* (*Myrtea*) *fabula* Casto de Elera, Cat. Sist. Filip., p. 778.
1905. *Lucina fabula* Hidalgo, Cat. Filip., p. 354.
1928. *Lucina fabula* Faustino, Summary Philippine Mar. Freshw. Moll., p. 53.

A right valve, which agrees in all details with *Myrtea fabula* (Reeve) from the Philippines, was collected by the "Siboga" Expedition at Banda.

Genus **Divaricella** von Martens.

1880. *Divaricella* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 321.
1887. *Divaricella* Fischer, P., Man. Conchyliol., p. 1143.
1901. *Divaricella* Dall, Proc. U. S. Nat. Mus., XXIII, p. 814.
1903. *Divaricella* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1387.
1921. *Divaricella* Lamy, Journ. Conchyliol., LXV, p. 266.
1925. *Divaricella* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 127.

For good descriptions of the genus reference may be made to Lamy and Woodring's works cited above. The genotype is *Divaricella angulifera* von Martens = *D. ornata* (Reeve).

1. *Divaricella ornata* (Reeve).

1850. *Lucina ornata* Reeve (non C. B. Adams), Conch. Icon., VI, *Lucina*, pl. VIII, fig. 48.
1850. *Lucina divaricata* Reeve (non Linn., ex parte), id., pl. VIII, fig. 47*b*.
1857. *Lucina* (*Cyclas*) *ornata* Adams, H. & A., Gen. Rec. Moll., II, p. 467.
1869. *Lucina quadrisulcata* var. *A.* Pfeiffer in Martini-Chemn. Conch.-Cab. (N. F.), XI (I), *Cyprina* etc., p. 269.
1871. *Lucina* (*Cyclas*) *quadrimaculata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1871. *Lucina ornatissima* Fischer, P. (non d'Orbigny), Journ. Conchyliol., XIX, p. 216.
1877. *Lucina* (*Cyclas*) *ornata* Angas, Proc. Zool. Soc. London, p. 192.
1880. *Lucina* (*Divaricella*) *angulifera* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 321, pl. XII, figs. 14, 14*a*.
1883. *Lucina ornata* Brazier, Proc. Linn. Soc. N. S. Wales, VIII, p. 229.
1884. *Lucina* (*Divaricella*) *ornata* Smith, Rept. Voy. "Alert", p. 103.
1885. *Lucina ornata* Smith, "Challenger" Lamellibranch., p. 177.
1886. *Lucina quadrisulcata* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 98.
1897. *Lucina* (*Divaricella*) *quadrisulcata* Sowerby, Mar. Shells S. Africa, Appendix, p. 26.
1901. *Lucina* (*Divaricella*) *quadrisulcata* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math. Nat., LXIX, p. 285.
1910. *Divaricella angulifera* Hedley, Austral. Ass. Adv. Sci., XII, p. 347.
1916. *Divaricella quadrisulcata* var. *ornata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXII, p. 185.
1916. *Divaricella angulifera* Hedley, Journ. Proc. Roy. Soc. West Australia, p. 161.
1919. *Lucina angulifera* Odhner, Arkiv Zool., XII, n⁰. 6, p. 26.
1921. *Divaricella ornata* Lamy, Journ. Conchyliol., LXV, p. 270.
1929. *Divaricella ornata* Dautzenberg, Faun. Col. Francais., III, p. 624.

Smith described the distinguishing characters of *D. ornata* and was of opinion that it was this species which was described by von Martens under the name *D. angulifera*. Lamy has discussed in detail the opinions of the different authorities in reference to this species, and given a complete synonymy of the species.

Distribution: — *D. ornata* has a wide range in the Indo-Pacific.

In the "Siboga" collection the species is represented by several valves collected at Macassar (St. 71).

2. *Divaricella cumingi* (A. Adams & Angas).

1863. *Lucina* (*Cyclas*) *Cumingi* Adams, A., & Angas, Proc. Zool. Soc. London, p. 426, pl. XXXVII, fig. 20.
1865. *Lucina* (*Cyclas*) *Cumingi* Angas, Proc. Zool. Soc. London, p. 651.
1873. *Lucina divaricata* Hutton (non Lamarck), Cat. Mar. Moll. New Zealand, p. 74.
1877. *Lucina* (*Cyclas*) *Cumingi* Angas, Proc. Zool. Soc. London, p. 192.
1878. *Lucina divaricata* Hutton (non Lamarck), Journ. Conchyliol., XXVI, p. 51.
1883. *Lucina Cumingi* Brazier, Proc. Linn. Soc. N. S. Wales, VIII, p. 229.
1884. *Loripes Cumingiana* Grasset, Ind. Test. Viv., p. 279.
1884. *Lucina* (*Divaricella*) *Cumingi* Smith, Rept. Voy. "Alert", p. 508.
1885. *Lucina* (*Divaricella*) *Cumingi* Smith, "Challenger" Lamellibranchia, p. 177.
1885. *Lucina dentata* Hutton (non Wood), Proc. Linn. Soc. N. S. Wales, IX, p. 525.
1890. *Lucina* (*Cyclas*) *Cumingi* Paetel, Cat. Conch. Samm., III, p. 125.
1906. *Divaricella Cumingi* Hedley, Trans. New Zealand Inst., XXXVIII, p. 73.
1911. *Divaricella Cumingi* Hedley, Zool. Res. "Endeavour", Moll. p. 92.
1913—15. *Divaricella Cumingi* Suter, Man. New Zealand Moll., p. 913, pl. LVIII, fig. 18.
1918. *Divaricella Cumingi* Hedley, Journ. Roy. Soc. N. S. Wales, LI, p. 18.
1921. *Divaricella Cumingi* Lamy, Journ. Conchyliol., LXV, p. 277.

The orbicular, subglobose, moderately thick shell of *D. cumingi* has a beautiful sculpture formed by inverted V-shaped ridges with their apices on a line running from the umbo to almost the anteriormost point of the basal margin; a few strongly marked lines of growth are also to be distinguished as low, rounded concentric ridges.

Distribution: — *D. cumingi* is a common species round New Zealand, and has also been recorded from Australia and Ceylon.

In the "Siboga" collection there are two young and worn valves dredged from the Western entrance of Samau Strait (St. 59).

Genus **Dentilucina** P. Fischer.

1887. *Dentilucina* Fischer, P., Man. Conchyliol., p. 1143.
1903. *Phacoides* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1359.
1915. *Dentilucina* Iredale, Proc. Malacol. Soc. London, XI, p. 302.
1920. *Phacoides* Lamy, Journ. Conchyliol. LXV, p. 169.
1925. *Phacoides* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 117.

As IREDALE rightly pointed out BLAINVILLE's name *Phacoides* was used as a vernacular name and must therefore give place to *Dentilucina* P. Fischer. The genotype is *Dentilucina jamaicensis* (Lam.).

In the "Siboga" collection two other subgenera, *Callucina* Dall — type *D.* (*C.*) *radians* (Conrad) and *Bellucina* Dall — type *D.* (*B*). *eucosmia* Dall are also represented.

1. *Dentilucina* (*Dentilucina*) *dentifera* (Jonas).

1846. *Lucina dentifera* Jonas, Zeitschr. Malakozool., III, p. 17.
1847. *Lucina dentifera* Philippi, Abbild. Beschreib. Conch., II, p. 206, *Lucina*, pl. I, figs. 4, 4.
1850. *Lucina dentifera* Reeve, Conch. Icon., VI, *Lucina*, pl. III, figs. 10*a*, *b*.
1857. *Lucina dentifera* Adams, H. & A., Gen. Rec. Moll., II, p. 467.
1860. *Lucina dentifera* Reeve, Elem. Conch., II, p. 122.
1862. *Lucina dentifera* Chenu, Man. Conchyliol., II, p. 119, fig. 568.

1865. *Lucina dentifera* Vaillant, Journ. Conchyliol., XIII, p. 116.
1870. *Lucina dentifera* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1884. *Lucina dentifera* Grasset, Ind. Test. Viv., p. 278.
1886. *Lucina dentifera* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 98.
1890. *Lucina dentifera* Paetel, Cat. Conch. Samm., III, p. 125.
1901. *Lucina dentifera* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math. Nat., LXIX, p. 284.
1902. *Lucina dentifera* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1904. *Lucina dentifera* Smith, Ann. Mag. Nat. Hist., (7) XIV, p. 10.
1906. *Lucina dentifera* Melvill & Standen, Proc. Zool. Soc. London, p. 814.
1906. *Lucina dentifera* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 257.
1916. *Phacoides dentifera* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXII, p. 153.
1920. *Phacoides dentifer* Lamy, Journ. Conchyliol., LXV, p. 179.

The specimens, which I refer to this species, are all young shells. They agree with the description of the species in all respects except that the lamellae are not so serrated as shown in Reeve's figures.

Distribution: — *D.* (*D.*) *dentifera* was described from the Red Sea, and has since been recorded from various places in the Indian Ocean and the Persian Gulf.

The "Siboga" shells referred to this species were collected in the Madura Strait (St. 2).

2. *Dentilucina* (*Dentilucina*) *bengalensis* (Smith).

1894. *Lucina bengalensis* Smith, Ann. Mag. Nat. Hist., (6) XIV, p. 171, pl. V, figs. 1, 2.
1897. *Lucina bengalensis* Smith, Illustr. Zool. "Investigator", pl. II, figs. 4, 4*a*.
1904. *Lucina bengalensis* Smith, Ann. Mag. Nat. Hist., (7) XIV, p. 10.
1906. *Lucina bengalensis* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 257.

A single specimen brought up in a deep-sea trawl at St. 17 agrees closely with specimens of *D.* (*D.*) *bengalensis* in the Indian Museum, Calcutta and the British Museum (Nat. Hist.), London. The "Siboga" shell is, however, about $1^1/_2$ times the size of the type of the species: its measurements are: — length 53 mm., height 44 mm., diameter 26 mm. The concentric lamellae are a little better developed than on the type-shell.

Distribution: — *D.* (*D.*) *bengalensis* was described from shells dredged from off the Delta of the Godaveri, Bay of Bengal. The species has since been taken at other stations in the Bay of Bengal.

The "Siboga" shell was brought up in a deep-sea trawl at St. 17 (7° 28'.5 S., 115° 28' E., 1060 metres).

3. *Dentilucina* (*Dentilucina*) *inanis* sp. nov. (Plate V, figs. 9, 10).

Dentilucina (*Dentilucina*) *inanis* is closely allied to *D.* (*D.*) *pamela* (Melvill & Standen [1]), but the shell is more truncate anteriorly, less regularly curved posteriorly and along its ventral border; there is also a better developed posterior dorsal area demarcated by a radial depression; and a somewhat less marked anterior area similarly separated. The surface sculpture consists of low concentric laminae, better marked in young than in the adult examples. The species is not very tumid and the lunule is not so well marked as in *D.* (*D*). *pamela*. The shells are of a dirty yellow colour; the nacre is whitish.

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[1] Melvill, J. C. & Standen, R. — Proc. Zool. Soc. London, p. 815, pl. LV, fig. 6 (1906).

Measurements of Holotype: — Length 6.7 mm., height 6 mm., diameter 3 mm.

Locality: — A few shells of this beautiful species were brought up in a trawl at Saleh Bay, north coast of Sumbawa (St. 312).

4. *Dentilucina* (*Callucina*) *flabelliformis* sp. nov. (Plate V, figs. 11, 12).

The following is a description of this new species: — Species of a small size, shell longitudinally ovate, moderately inflated, subequilateral, thick; anterior border running imperceptibly into the greatly arcuate ventral margin, posterior border obliquely subtruncate; umbones full, low, slightly projecting above the hinge-line; no anterior and posterior dorsal areas; lunule narrow, moderately impressed; sculpture consisting of low but distinctly raised concentric lamellae, which are sharp-edged near the margins particularly posteriorly, and irregular but distinct radial threads in the interspaces; inner margin of valves smooth. Shell of a greenish yellow colour, nacre white.

Measurements of Holotype: — Length 6.5 mm., height 5.4 mm., diameter 3.8 mm.

Habitat: — The holotype and two stray valves were brought up in a trawl at St. 256 (5° 26′.6 S., 132° 32′.5 E., 397 metres).

Remarks: — The peculiar form and sculpture of the shell of *D.* (*C.*) *flabelliformis* are very distinctive.

5. *Dentilucina* (*Bellucina*) *macassari* sp. nov. (Plate V, figs. 13—16).

This new species is closely allied to the type-species of the subgenus *Bellucina* — *Dentilucina* (*Bellucina*) *eucosmia* Dall[1]) (= *Lucina pisum* Reeve) —, but is easily distinguished by its much smaller, more oblique more inflated and much thicker shell. The anterior and posterior dorsal areas are well marked; the former being the better developed; the ventral border is less arcuate. The sculpture consists of about a dozen well developed concentric lamellae; of these the last 6—7 are very strongly developed; and a large number of strong radials running over the concentric lamellae and in the interspaces; the criss-crossing of the concentric and radial lamellae gives the surface a latticed appearance. The inner margins of the valves are strongly fluted. The shell is of a dirty white colour.

Measurements of Holotype: — Length 4.8 mm., height 5 mm., diameter 5 mm.

Habitat: — A few shells of this interesting species were collected at Macassar (St. 71).

6. *Dentilucina* (*Bellucina*) *hedleyi* sp. nov. (Plate V, figs. 17, 18).

This new species I have named in memory of the late CHARLES HEDLEY, the distinguished Curator of Molluscs in the Australian Museum, Sydney.

D. (*B.*) *hedleyi* is closely allied to *D.* (*B.*) *rugosa* (Hedley)[2]) but is distinguished by its smaller, more regular and orbicular shell, with a more regularly curved anterior margin, more truncate posterior margin, and less developed anterior and posterior dorsal areas. The sculpture consists of numerous (over 25) closely placed concentric lamellae; the very numerous radial lamellae are comparatively feebly developed, but by their intersection with the concentric lamellae give the latter a beaded appearance. The inner margins of the valves are minutely crenulated. The umbones are full, acute and sharply curved forwards and inwards; the lunule is hardly impressed.

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[1]) DALL, W. H. — Proc. U. S. Nat. Mus., XXIII, p. 806 (1901) and REEVE, L., Conch. Icon., VI, *Lucina*, pl. XI, figs. 66, *a*, *b* (1850). LAMY, E., Journ. Conchyliol., LXV, p. 211 (1920) has combined *L. pisum* with *L. semperiana* Issel from the Red Sea, but this latter species, from its description, appears to be quite distinct.

[2]) HEDLEY, C. — Proc. Linn. Soc. N. S. Wales, XXXIV p. 427, pl. XXXVII, figs. 17, (1909).

Measurements of the Holotype: — Length 8.5 mm., height 8.5 mm., diameter 5.5 mm.

Habitat: — Two specimens of *D.* (*B.*) *hedleyi* were dredged at St. 105 (6° 8′ N., 121° 19′ E., 275 metres).

7. *Dentilucina* (*Bellucina*) *hedleyi* Prashad var. *quadrata* nov. (Plate V, figs. 19, 20).

A number of specimens from St. 212 differ from the typical shells of the new species *D.* (*B.*) *hedleyi* described above, in that the shells are larger, more quadrate and more solid; the dorsal anterior and posterior areas more marked, and the sculpture more granular. I propose separating these under the varietal name *quadrata*.

Measurements of Holotype: — Length 10.5 mm., height 10.5 mm., diameter 8.2 mm.

Habitat: — A number of shells of this new variety were brought up in a deep-sea trawl at St. 212 (5° 54′.5 S., 120° 19′.2 E., 462 metres).

Family UNGULINIDAE.

Genus **Diplodonta** Bronn.

1831. *Diplodonta* Bronn, Ital. Tertiär Gebilde etc., p. XII.
1887. *Diplodonta* Fischer, P., Man. Conchyliol., p. 1098.
1901. *Diplodonta* Dall, Proc. U. S. Nat. Mus., XXIII, p. 792.
1921. *Diplodonta* Lamy, Journ. Conchyliol., LXV, p. 335.
1925. *Diplodonta* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 128.
1930. *Taras* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰. 3, p. 193.

STEWART has replaced *Diplodonta* Bronn by *Taras* Risso, but as it is doubtful whether even the type-species of the latter, *T. antiquatus*, is one of the Ungulinidae, I follow LAMY in using the generic name *Diplodonta*.

The genotype of *Diplodonta* is *D. lupinus* (Brocchi).

1. *Diplodonta bullata* Dunker.

1865. *Diplodonta bullata* Dunker, Novitat. Conch., Meeresconch., Supplement, II, p. 76, pl. XXVI, fig. 1.

DUNKER published very good figures and a detailed description of this species from Ceylon. LYNGE[1]) considered it, however, to be synonymous with *D. globosa* (Forskål). I have carefully compared the "Siboga" shells, which I assign to *D. bullata* with shells of the same size of *D. globosa*, and am of opinion that the two are quite distinct. The shells of *D. bullata*

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1) LYNGE, H. — D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 175 (1919).

are very tumid, the outline is much less regularly curved than in *D. globosa*, the umbones are more prominent, and the concentric sculpture is coarser, less regular and much better marked than in the latter species. The hinge teeth of *D. globosa* are more strongly developed and the shell is thicker.

Distribution: — *D. bullata* was described from Ceylon.

In the "Siboga" collection the species is represented by shells collected in the Bay of Bima (St. 47), St. 164 (1° 42'.5 S., 130° 47'.5 E., 32 metres) and Banda Anchorage (St. 240).

2. *Diplodonta globosa* (Forskål).

1775. *Venus globosa* Forskål, Descr. Anim., p. 122.
1784. *Venus globosa* etc. Chemnitz, Conch.-Cab., VII, p. 36, pl. XL, figs. 430, 431.
1788. *Venus globosa* Schröter, Conch.-Cab. Namen Reg., p. 112.
1790. *Venus globosa* Gmelin, Syst. Nat., (ed. XIII), p. 3287.
1817. *Lucina* Savigny, Descr. Egypt., pl. VIII, figs. 7, 1—5.
1817. *Venus globosa* Dillwyn, Descr. Cat., I, p. 202.
1825. *Lucina globosa* Gray, Ann. Philos., (n. s.), IX, p. 136.
1827. *Lucina* aff. *edentula* Audouin (nec Linn. non Lam.), Descr. Egypt., I, p. 197.
1840. *Venus globosa* Pfeiffer, Krit. Reg., p. 66.
1842. *Lucina Globosa* Hanley, Rec. Biv. Shells, p. 78.
1857. *Venus globosa* Römer, Krit. Untersuchungen, p. 103.
1863. *Lucina globosa* Deshayes, Cat. Moll. Réunion, p. 21.
1865. *Diplodonta Savignyi* Vaillant, Journ. Conchyliol., XIII, p. 117.
1869. *Diplodonta Savignyi* and *Lucina* (*Loripes*) *globosa* Issel, Malacol. Mar. Rosso, pp. 81, 85.
1872. *Lucina globosa* Pfeiffer in Martini-Chemn. Conch.-Cab. (N. F.), XI (1), Cyprina etc., p. 267, pl. XX, figs. 11, 12.
1874. *Diplodonta Savignyi* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 448.
1874. *Diplodonta Savignyi* and *Lucina globosa* von Martens, Vorderasiat. Conch., pp. 103, 105.
1880. *Lucina* (*Anodontina*) *globosa* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 322.
1886. *Lucina globosa* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 99.
1886. *Diplodonta Savignyi* Cooke, op. cit., p. 389.
1888. *Loripes globosus* Jousseaume, Mém. Soc. Zool. France, I, p. 210.
1890. *Diplodonta Savignyi* Paetel, Cat. Conch. Samm., III, p. 130.
1892. *Loripes globosus* Sowerby, Mar. Shells S. Africa, p. 61, pl. IV, fig. 91.
1896. *Lucina* (*Cyclas*) *globosa* Casto de Elera, Cat. Sist. Filip, p. 779.
1899. *Cryptodon globosum* Hedley (ex parte), Mem. Austral. Mus., III, p. 498.
1901. *Diplodonta Savignyi* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXIX, p. 285.
1901. *Cryptodon globosum* Tate & May, Proc. Linn. Soc. N. S. Wales, XXVI, p. 432.
1903. *Cryptodon globosus* Smith, Faun. Geogr. Maldive Laccadive Archipelago., p. 626.
1904. *Cryptodon globosus* Smith, Journ. Malacol., XI, p. 25.
1905. *Diplodonta Savignyi* Anthony, Bull. Mus. d'Hist. Nat. Paris, XI, p. 491.
1906. *Cryptodon globosum* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 212.
1906. *Cryptodon globosum* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 465.
1909. *Diplodonta globosa* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 130.
1909. *Diplodonta globosa* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 175.
1915. *Lucina globosa* Bartsch, Bull. U. S. Nat. Mus., XCI, p. 194.
1916. *Diplodonta globosa* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXII, p. 189.
1921. *Diplodonta globosa* Lamy, Journ. Conchyliol., LXV, p. 345.
1926. *Diplodonta globosa* Pallary, Mém. Inst. Egypt., XI, p. 102, pl. XII, fig. 7, 1—5.

In view of the remarks of LYNGE and LAMY there can be little doubt that *Diplodonta* *globosa* is the species figured by CHEMNITZ and later by SAVIGNY. The shells of the species are, as noted already, not so globose as those of *D. bullata* and the sculpture is less well developed. The hinge consists of two cardinal teeth in each valve, and of these the posterior one is bifid.

HEDLEY is wrong in uniting REEVE's *Lucina ovum* [1]) with *D. globosa*, as the former, as its hinge shows, is a true *Lucina*.

Distribution: — *C. globosa* is widely distributed in the Indo-Pacific and also occurs in the Red Sea.

In the "Siboga" collection the species is represented from the Bay of Pidjot, Lombok (St. 33), Bay of Bima (St. 47), Western entrance Samau Strait (St. 59), Muaras Reef (St. 91), Sulu Harbour (Stat. 104) and Lohio Bay, Buton Strait (St. 205).

3. *Diplodonta auriculata* Sowerby.

1905. *Diplodonta auriculata* Sowerby, Proc. Malacol. Soc. London, VI, p. 281, fig. 2.

SOWERBY in the description of *Diplodonta auriculata* gave Sierre Leone as its habitat, but the type-shell (N⁰ 1905. 10.23.34) in the Collections of the British Museum (Nat. Hist.), London, is labelled Ceylon, and the same locality is noted in the Receipt Register of the Museum.

In the "Siboga" collection there is a single left valve collected on the Borneo Bank (St. 81), which agrees in every respect with the type shell.

4. *Diplodonta lamyi* sp. nov. (Plate V, figs. 21—23).

I associate this new species with the name of my friend Monsieur E. LAMY of the Museum d'Histoire Naturelle, Paris.

D. lamyi greatly resembles *D. jousseaumei* Lamy [2]) from West Africa but is distinguished by its much thicker shell, with the anterior margin more rounded, the posterior more rostrate and the ventral margin less arcuate. The umbones are more prominent, and are curved forwards and inwards; the ridge or carina running down from the umbones separating the posterior greatly depressed part of the shell is better developed. The sculpture consists of thin concentric striae.

Measurements of Holotype (single left valve): — Length 31.5 mm., height 25.5 mm., diameter 9 mm.

Habitat: — A number of stray valves of this species were collected in Sapeh Bay, east coast of Sumbawa (St. 311).

The anatomy of this species was described by PELSENEER as that of *Diplodonta subglobosa*?

5. *Diplodonta dubia* sp. nov. (Plate IX, figs. 5—8).

This new species may later have to be combined with *D. ethima* Melvill & Standen [3]) but with the material at my disposal, I am of opinion that it is quite distinct.

The shell of *D. dubia* is more arched both anteriorly and posteriorly and the ventral margin is less arcuate; the shell is more tumid and the umbones are more prominent. The

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1) REEVE, L. — Conch. Icon., II, *Lucina*, pl. V, fig. 21 (1850).
2) LAMY, E. — Journ. Conchyliol., LXV, p. 365 (1921).
3) MELVILL, J. C. & STANDEN, R. — Journ. Linn. Soc. London (Zool.), XXVII, p. 197, pl. XI, figs. 17, 17*a* (1899).

sculpture of the shells is more regular more delicate and consists of closely placed concentric striae. The shell is not so thin as that of *D. ethima* while the margin is specially thickened.

Measurements of Holotype: — Length 9.4 mm., height 8.8 mm., diameter 6.3 mm.

Habitat: — The unique holotype was dredged at Rumah-Kuda Bay, Roma Island (St. 279).

It is the species the anatomy of which was found by PELSENEER [1]) to differ from the typical species of *Diplodonta* in the foot being not swollen near the apex, and having very extensive external branchia.

Family LEPTONIDAE.

Genus **Kellia** Turton.

1822. *Kellia* Turton, Conch. Insularum Brittan., p. 56.
1837. *Tellimya* (section 1) Brown, Illustr. Rec. Conch. Great Britain, Ireland, p. 106.
1857. *Kellia* Adams, H. & A., Gen. Rec. Moll., II, p. 474.
1887. *Kellya* Fischer, P., Man. Conchyliol., p. 1025.
1900. *Kellia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1153.

I agree with DALL that section I of *Tellimya* Brown [2]) is a synonym of *Kellia* Turton — genotype *Kellia suborbicularis* (Montagu).

In the "Siboga" collection there is a young shell from St. 164 (1° 42′.5 S., 130° 47′.5 E., 32 metres), which it is impossible to identify specifically. Another single valve from St. 98 (6° 9′ N., 120° 21′ E., 350 metres) resembles *Kellia adamsi* (Angas) [3]) from Port Jackson, but the "Siboga" shell is thinner and its sculpture is more strongly developed.

Family GALEOMMATIDAE.

Genus **Galeomma** Turton.

1825. *Galeomma* Turton, Zool. Journ., II, p. 361.
1857. *Galeomma* Adams, H. & A., Gen. Rec. Moll., II, p. 479.
1868. *Thyreopsis* Adams, H., Proc. Zool. Soc. London, p. 14.
1887. *Lepirodes* Fischer, P., Man. Conchyliol., p. 1031.
1900. *Galeomma* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1119.

The genotype of *Galeomma* is *G. turtoni* (Broderip and Sowerby), and I have no doubt that the Deshayesian species *angusta* and *polita* are true *Galeomma* and not species of the genus *Scintilla*, as several authors have considered them to be.

1. *Galeomma angusta* Deshayes.

1856. *Galeomma angusta* and *G. chloroleuca* Deshayes, Proc. Zool. Soc. London (volume for 1855), p. 177.
1857. *Galeomma angusta* and *G. chloroleuca* Adams, H. & A., Gen. Rec. Moll., II, pp. 479, 480.

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1) PELSENEER, P. — "Siboga" Lamellibranches (Anat.), p. 41, pl. XIII, fig. 7 (1911).
2) BROWN, T. — Illustr. Rec. Conch. Great Britain, Ireland, pl. XIV, figs. 12, 13 (1827).
3) ANGAS, A. — Proc. Zool. Soc. London, p. 910, pl. XLIV, fig. 11 (1867).

1874. *Galeomma angusta* and *G. chloroleuca* Sowerby, Thes. Conch., III, p. 174, pl. CCXXXIV, figs. 10, 12.
1874. *Galeomma angusta* and *G. chloroleuca* Sowerby in Reeve, Conch. Icon., XIX, *Galeomma*, pl. 1, figs. 3, 5.
1890. *Galeomma angusta* and *G. chloroleuca* Paetel, Cat. Conch. Samm., III, p. 134.
1909. *Galeomma angusta* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 184.
1928. *Galeomma angusta* and *G. chloroleuca* Faustino, Summary Philippine Mar. Freshw. Moll., p. 59.

I am able to confirm Lynge's opinion that *G. chloroleuca* should be united with *G. angusta*. The shells on which the two forms are based are only slightly different shells of the same species.

Distribution: — *G. angusta* was described from the Philippine Islands, and has since been recorded from the Gulf of Siam.

In the "Siboga" collection the species is represented by a single shell dredged between Loslos and Broken Islands, west coast of Salawatti (St. 162).

2. *Galeomma polita* Deshayes.

1856. *Galeomma polita* Deshayes, Proc. Zool. Soc. London (vol. for 1855), p. 169.
1857. *Galeomma polita* Adams, H. & A., Gen. Rec. Moll., II, p. 480.
1860. *Galeomma polita* Reeve, Elem. Conch.. II, p. 127.
1862. *Scintilla polita* Sowerby, Thes. Conch., III, p. 175, pl. CCXXIV, fig. 19.
1874. *Scintilla polita* Sowerby in Reeve, Conch. Icon., XIX, *Scintilla*, pl. IV, fig. 32.
1890. *Galeomma polita* Paetel, Cat. Conch. Samm., III, p. 134.
1896. *Scintilla polita* Casto de Elera, Cat. Sist. Filip., p. 784.
1905. *Galeomma polita* Hidalgo, Cat. Filip., p. 358.
1928. *Scintilla polita* Faustino, Summary Philippine Mar. Freshw. Moll., p. 58.

Sowerby was certainly wrong in transferring *Galeomma polita* to the genus *Scintilla*, as the hinge is that of *Galeomma* and the form of the shell also is similar to that of other species of the genus.

Distribution: — *G. polita* was described from the Philippine Islands.

The "Siboga" Expedition dredged a single specimen in Pepela Bay, east coast of Rotti Island (St. 301).

Genus **Scintilla** Deshayes.

1856. *Scintilla* Deshayes, Proc. Zool. Soc. London (volume for 1855) p. 171.
1857. *Scintilla* Adams, H. & A., Gen. Rec. Moll., II, p. 480.
1887. *Scintilla* Fischer, P., Man. Conchyliol., p. 1031.
1900. *Scintilla* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, pp. 1117, 1120.

For a detailed discussion of the genus *Scintilla* reference may be made to Dall (loc. cit., p. 1121). As was suggested by Fischer the genus *Scintilla* was a composite genus originally, and following Adams and Dall I adopt *Scintilla* in a restricted sense with *Scintilla philippinensis* Deshayes as the type.

1. *Scintilla striatina* Deshayes.

1856. *Scintilla striatina* Deshayes, Proc. Zool. Soc. London (volume for 1855), p. 176.
1857. *Scintilla striatina* Adams, H. & A., Gen. Rec. Moll., II, p. 481.

1862. *Scintilla striatina* Sowerby, Thes. Conch., III, p. 179, pl. CCXXXV, fig. 40.
1874. *Scintilla striatina* Sowerby in Reeve, Conch. Icon., XIX, *Scintilla*, pl. V, fig. 40.
1890. *Scintilla striatina* Paetel, Cat. Conch. Samm., III, p. 135.
1896. *Scintilla striatina* Casto de Elera, Cat. Sist. Filip., p. 784.
1905. *Scintilla striatina* Hidalgo, Cat. Filip., p. 357.
1906. *Scintilla striatina* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 213.
1925. *Scintilla striatina* Faustino, Summary Philippine Mar. Freshw. Moll., p. 59.

Two typical shells of *S. striatina* were collected at Saleyer Anchorage (St. 213). The species has so far been recorded from the Philippines and Tuamotu Archipelago, Polynesia.

2. *Scintilla lutea* (Lamarck).

1818. *Lucina lutea* Lamarck, Anim. sans Vertèb., V, p. 544.
1835. *Lucina lutea* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 231.
1841. *Lucina lutea* Delessert, Rec. Coq. Lamarck, pl. VI, figs. 9*a*—*c*.
1843. *Lucina lutea* Sganzin, Coq. Ile France etc., p. 7.
1845. *Lucina lutea* Catlow & Reeve, Conch. Nomencl., p. 26.
1880. *Scintilla lutea* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 322.
1890. *Scintilla lutea* Paetel, Cat. Conch. Samm., III, p. 153.

In his valuable paper on the Molluscs of Mauritius and Seychelles VON MARTENS suggested that the species *S. pisum* Sowerby is probably a synonym of *S. lutea* (Lam.). The material of the two species at my disposal is unfortunately very limited and it is not possible to form any definite opinion.

Distribution: — *S. lutea* has been recorded from Mauritius, Bourbon and Madagascar.

In the "Siboga" collection there is a single valve of this species from Sulu Harbour, Sulu Island (St. 104).

3. *Scintilla faba* Deshayes.

1856. *Scintilla faba* Deshayes, Proc. Zool. Soc. London (volume for 1855), p. 180.
1857. *Scintilla faba* Adams, H. & A., Gen. Rec. Moll., II, p. 481.
1862. *Scintilla faba* Sowerby, Thes. Conch., III, p. 177, pl. CCXXXIV, fig. 17.
1874. *Scintilla faba* Sowerby in Reeve, Conch. Icon., XIX, *Scintilla*, pl. IV, fig. 29.
1890. *Scintilla faba* Paetel, Cat. Conch. Samm., III, p. 135.
1902. *Scintilla faba* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1911. *Scintilla faba* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 43, pl. XVI, fig. 7.

The shells of *S. faba* vary to some extent in outline and the anterior side is often rounded instead of subtruncate. The shells have minute pits scattered regularly over the valves; in the middle area below the umbones, however, the surface shows a number of close set concentric striae.

Distribution: — *S. faba* was described from Borneo, and has also been recorded from Aden.

In the "Siboga" collection there are shells from the east side of Pajunga Island, Kwandang Bay (St. 115), Ambon Anchorage (St. 231) and Pepela Bay, east coast of Rotti Island (St. 301).

4. *Scintilla ambigua* (Deshayes).

1856. *Caleomma ambigua* Deshayes, Proc. Zool. Soc. London (volume for 1855), p. 168.
1860. *Scintilla ambigua* Reeve, Elem. Conch., II, p. 127.
1862. *Scintilla ambigua* Sowerby, in Reeve, Thes. Conch., III, p. 176.

1867. *Galeomma ambigua* Mitchell, Cat. Mus. Madras, p. 63.
1874. *Scintilla ambigua* Sowerby, Conch. Icon., XIX, *Scintilla*, p. III, figs. 19*a*—*d*.
1884. *Scintilla ambigua* Grasset, Ind. Test. Viv., p. 281.
1890. *Scintilla ambigua* Paetel, Cat. Conch. Samm., III, p. 134.
1905. *Galeomma ambigua* Hidalgo, Cat. Filip., p. 358.
1928. *Galeomma ambigua* Faustino, Summary Philippine Mar. Freshw. Moll., p. 59.

Scintilla ambigua is closely allied to *S. faba*, but the shell is narrower and more elongated.

Distribution: — *S. ambigua* has so far been recorded from the Philippines only.

In the "Siboga" collection there is a shell collected at Ambon Anchorage (St. 231), which agrees very well with the type of the species in the British Museum (Nat. Hist.), London.

5. *Scintilla sp.*

I have not been able to identify specifically a number of specimens of a *Scintilla* from Macassar (St. 71), Kwandang Bay entrance (St. 115), Anchorage off Beo, Karakelang Islands (St. 131) and Saleyer (St. 213). These shells vary in outline from subquadrate to circular, and appear to be intermediate between *S. timorensis* Deshayes and *S. cuvieri* Deshayes [1].

Genus **Pythina** Hinds.

1845. *Pythina* Hinds, Zool. Voy. "Sulphur", II, p. 70.
1857. *Pythina* Adams, H. & A., Gen. Rec. Moll., II, p. 475.
1887. *Pythina* Fischer, Man. Conchyliol., p. 1027.
1891. *Pythina* Smith, Ann. Mag. Nat. Hist., (6) VIII, p. 227.
1900. *Bornia* (ex parte) Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, pp. 1147, 1148.

Smith from his studies of the hinge and shells of the genotype of *Pythina* concluded that "the so-called genus *Pythina* differs from *Kellia* only in having the surface ornamented with divaricating plicae, a feature in my judgement, only of specific value". Pelseneer [2] from his studies of the animal came to the conclusion that *Pythina* differs materially from *Kellia* and the Lasaeidae, and should be placed with *Scintilla*, *Galeomma*, *Ephippodonta* and *Chlamydoconcha* in the family Galeommatidae.

1. *Pythina deshayesiana* Hinds. (Plate, V, figs. 24, 25).

1845. *Pythina deshayesiana* Hinds, Zool. Voy. "Sulphur", II, p. 70, pl. XIX, figs. 8, 9.
1852. *Pythina Deshayesiana* Sowerby, Conch. Man., pp. 261, 336, pl. XXVII, fig. 571.
1857. *Pythina Deshayesiana* Adams, H. & A., Gen. Rec. Moll., II, p. 476, pl. CXIV, figs. 9, 9*a*.
1862. *Pythina Deshayesiana* Chenu, Man. Conchyliol., II, p. 126, fig. 603.
1878. *Pythina Deshayesiana* Kobelt, Illustr. Conchylienbuch, p. 352, pl. CIII, fig. 8.
1880. *Kellia* (*Pythina*) *Deshayesiana* Woodward, Man. Conch., (ed. IV), p. 459.
1884. *Kellia* (*Pythina*) *Deshayesiana* Tryon, Struct. Syst. Conch., III, p. 221, pl. CX, fig. 96.
1885. *Pythina deshayesiana* Smith, "Challenger" Lamellibranchia, p. 204.
1887. *Pythina Deshayesiana* Fischer, P., Man. Conchyliol., p. 1027.
1890. *Pythina Deshayesiana* Paetel, Cat. Conch. Samm., III, p. 132.

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[1] Deshayes, G. P. — Proc. Zool. Soc. London (volume for 1855), p. 174 (1856) and Sowerby, G. B, in Reeve, Conch. Icon., XIX, *Scintilla*, pl. II, figs. 15, 16 (1874).

[2] Pelseneer, P. — "Siboga" Lamellibranches (Anat.), pp. 43, 45 (1911).

1891. *Pythina Deshayesiana* Smith, Ann. Mag. Nat. Hist., (6) VIII, p. 228.
1905. *Pythina Deshayesiana* Hidalgo, Cat. Filip., p. 359.
1911. *Pythina Deshayesiana* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 43, pl. XVI, fig. 9.

The specimens from the "Siboga" collection, which I assign to this species, agree in all respects with the shells of the species in the British Museum (Nat. Hist.), London. I figure one of the shells.

Distribution: — *P. deshayesiana* has so far been recorded from the Philippine waters only. The "Siboga" shells of the species were dredged in Taruna Bay, Great Sangir Island (St. 127).

Family MONTACUTIDAE.

Genus **Montacuta** Turton.

1822. *Montacuta* Turton, Conch. Insularum Brittan., p. 58.
1857. *Montacuta* Adams, H. & A., Gen. Rec. Moll., III, p. 1169.
1886. *Montacuta* Fischer, P., Man. Conchyliol., p. 1027.
1900. *Montacuta* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1169.

I differ from DALL in considering *Mysella* Angas [1]) (= *Rochefortia* Velain) [2]) as a subgenus of *Montacuta*; the form of the shell and the hinge fully confirm this view. The genotype of *Montacuta* Turton is *Montacuta substriata* (Montagu).

In reference to *Mysella* and *Rochefortia*, DALL considered VELAIN's genus *Rochefortia* as earlier, but as IREDALE [3]) has shown *Rochefortia* can only be accepted as valid from 1878, and *Mysella* Angas 1877, will, therefore, have priority over it. The type of *Mysella* is *Mysella anomala* Angas.

1. *Montacuta smithi* sp. nov. (Plate V, figs. 26, 27).

I dedicate this species to the memory of the late Mr. EDGAR SMITH of the British Museum (Nat. Hist.), London, to whom we owe the major part of our knowledge of this interesting family of Bivalves.

Species of moderate size; shell elongate, subequilateral, cylindrical, rounded at both ends, slightly deeper in front than behind, tumid, fairly thick-shelled; longer anterior dorsal margin horizontal, slightly excurved, posterior much shorter, also horizontal and slightly arched; ventral margin almost straight, ascending more abruptly posteriorly; umbones hardly prominent, slightly raised above hinge-line, acute, situated somewhat behind middle; hinge-plate slightly thickened; sculpture consisting of minute concentric striae and few lines of growth. Shell of a dull white colour; nacre glossy white.

Measurements of Holotype: — Length 6.9 mm., height 4.5 mm., diameter 3 mm.

Habitat: — The unique Holotype was collected at the Anchorage off Lilintah, south coast of Misol (St. 176).

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1) ANGAS, A. — Proc. Zool. Soc. London, p. 176 (1877).
2) VELAIN, C. — Archiv. Zool. Exper. Gen., VI, p. 132 (1878).
3) IREDALE, T. — Proc. Linn. Soc. N. S. Wales, LXIX, p. 207 (1924).

Remarks: — *M. smithi* is closely allied to *M. cylindrica* Smith [1]), but is distinguished by the shell being smaller, less inequilateral, not so tumid, and the outline more regular. The sculpture of the two species is also different.

2. *Montacuta pelseneeri* sp. nov. (Plate V; fig. 28).

1911. *Montacutide*? St. 50, Pelseneer, "Siboga" Lamellibranches (Anat.), p. 47.

I associate this interesting species, which is represented by a complete right and a broken left valve, with the name of Dr. P. Pelseneer of Brussels.

M. pelseneeri is closely allied to *M. venusta* Lynge [2]) but the shell is much thicker, coarser, and is somewhat compressed behind the middle. The ventral margin is more arcuate and the shell is more acuminate anteriorly. The sculpture also is more pronounced; it consists of somewhat irregular, concentric striae, which are just visible to the naked eye.

Measurements of the Holotype: — Length 5.2 mm., height 3.5 mm., diameter of right valve 1.4 mm.

Habitat: — The unique Holotype was dredged in the Bay of Badjo, west coast of Flores (St. 50).

3. *Montacuta* (*Mysella*) *paula* (A. Adams).

1856. *Pythina paula* and *P. peculiaris* Adams, A., Proc. Zool. Soc. London, p. 47.
1857. *Pythina paula* Adams, H. & A., Gen. Rec. Moll., II, p. 476.
1885. *Montacuta paula* Smith, "Challenger" Lamellibranchia, p. 203, pl. XII, figs. 1, 1*b*.
1890. *Pythina paula* and *P. peculiaris* Paetel, Cat. Conch. Samm., III, p. 132.
1891. *Pythina paula* and *P. peculiaris* Smith, Ann. Mag. Nat. Hist., (6) VIII, p. 230, pl. XII, figs. 1, 1*a*, *b*.
1902. *Pythina paula* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1906. *Pythina paula* var. *peculiaria* Melvill & Standen, Proc. Zool. Soc. London, p. 816.
1909. *Montacuta* (*Tellimya*) *paula* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 182.
1911. *Montacuta* (*Tellimya*) *paula* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 45, pl. XVI, fig. 6.

A single broken left valve from Macassar (St. 71) is undoubtedly a young shell of *Montacuta* (*Mysella*) *paula*. I have examined the types of *M. paula* and *M. peculiaris* in the British Museum, London, and agree with Smith that the latter species is based on only an "unusually distorted" shell of the former.

Distribution: — *M.* (*M.*) *paula* has been recorded from Aden, Ceylon, Gulf of Siam, south of New Guinea and Torres Straits.

4. *Montacuta* (*Mysella*) *sibogai* sp. nov. (Plate V, figs. 29, 30).

M. (*M.*) *sibogai* closely resembles *M.* (*T.*) *arcuata* (A. Adams) [3]), but is easily distinguished by its shell being more triangular, comparatively deeper than long, anterior and posterior sides more sloping, ventral margin more arcuate, and the regular concentric sculpture more strongly developed.

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[1] Smith, E. A. — "Challenger" Lamellibranchia, p. 206, pl. XII, figs. 4, 4*a*, *b* (1885).

[2]) Lynge, H. — D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math. (7) V, p. 181, pl. III, figs. 28, 29 (1911).

[3]) Adams, A. — Proc. Zool. Soc. London, p. 47 (1856). I figure a shell of this species (Plate V, figs. 31, 32), magnified three times.

Measurements of the Holotype: — Length 3.5 mm., height 2 mm., diameter 1.2 mm.

Habitat: — The unique Holotype of *M. sibogai* was dredged at the Anchorage off Lirung, Salibabu Island (St. 133).

Genus **Isoconcha** Gen. nov.

1911. *Isoconcha sibogai* Dautzenberg & Fischer, H., in Pelseneer "Siboga" Lamellibranches (Anat.), p. 47, pl. XVI, fig. 12, pl. XVII, fig. 1.

In his account of the Montacutidae Pelseneer included at the instance of Messieurs P. Dautzenberg and H. Fischer two new generic names — *Isoconcha* and *Bilobaria*, and described their soft parts. The shells of neither of the two genera have been described so far, and unfortunately the box with label *Bilobaria* in the collection received from Paris, was found to be empty; this generic name must, therefore, remain a nomen inquirendum. Of *Isoconcha* a shell is available, and I agree with Messieurs Dautzenberg and Fischer that it represents an undescribed genus.

The following is a description of the shell of *Isoconcha*: — Shell small, subtrapezoidal, moderately solid, subequilateral, inflated, medially compressed; thin deciduous epiderms covering non-nacreous shell; umbones subcentral, moderately tumid; sculpture consisting of concentric striae; no lateral teeth, a single cardinal tooth arising from margin of shell centrally below umbones and a corresponding socket in each valve; ligament long, thin, external; no resilium; pallial line entire. Genotype: — *Isoconcha sibogai* sp. nov. The soft parts of the genotype have been described by Pelseneer.

I am also of opinion that Hedley's species[1]) *Turquetia integra* dredged from east of Sydney is also congeneric with *I. sibogai*, and should be referred to *Isoconcha.*

1. *Isoconcha sibogai* sp. nov. (Plate IX, figs. 9—12).

I. sibogai is closely allied to *I. integra* (Hedley), but is distinguished by the shell being less convex and distinctly compressed in the middle, the subtruncated anterior end, the ventral margin more arched, the umbones less prominent, the sculpture consisting of concentric striae, and the hinge teeth less strongly developed.

Measurements of Holotype: — Length 7 mm., height 4 mm., diameter 2.6 mm.

Habitat: — The unique Holotype was brought up in a deep-sea trawl at St. 300 (10° 48′.6 S., 123° 23′.1 E., 918 metres).

Family GELOINIIDAE.

Genus **Geloina** Gray.

1818. *Cyrena* (ex parte) Lamarck, Anim. sans Vertèb., V, p. 551 bis.
1847. *Geloina* Gray, Proc. Zool. Soc. London, p. 184.
1861. *Geloina* Mörch, Journ. Conchyliol., IX, p. 348.
1897. *Cyrena* von Martens, Weber's Zool. Ergebn. Reise Ost. Ind., IV, Süss.-Brackw. *Mollusca*, p. 90.
1903. *Cyrena* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 1441.

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1) Hedley, C. — Mem. Austral. Mus., VI, p. 364, pl. LXVI, figs. 7—10 (1907).

The generic name *Cyrena* Lam. as hitherto understood is an absolute synonym of *corbicula* Megerle, since *C. cor* was designated as its genotype by Children 1) in 1821. Stewart 2) following a suggestion of Baker argues that, as Schumacher suggested the resemblance of his *Cyclas laevigata* to pl. CCCII, fig. 4 of "Encyclopéd. Méthod." — the figure on which *Cyrena zeylanica* Lamarck was based — this may be accepted as the designation of the genotype of *Cyclas*, in which case the generic name *Cyclas* Lam. would become available for the forms hitherto known as *Cyrena*. I cannot agree with this suggestion, and have, therefore, adopted the next valid name available, viz: — *Geloina* Gray 3) with *G. coaxans* (Gmelin) as its genotype.

1. *Geloina erosa* (Solander).

1741. *Chama Lutraria* et *Coaxans* Rumph, Amboin. Rarit., p. 138, pl. XLII, fig. H.
1782. *Venus ceylonica* etc. Chemnitz, Conch.-Cab., VI, p. 333, pl. XXXII, fig. 336.
1786. *Venus erosa* Solander, Portland Catalogue, pp. 71, 186.
1788. *Venus ceylonica* Schröter, Conch.-Cab. Namen Reg., p. 42.
1790. *Venus coaxans* Gmelin, Syst. Nat., (ed. XIII), p. 3278.
1797. Bruguière, Encyclopéd. Méthod., pl. CCCII, figs. 4*a*, *b*.
1806. *Cyclas ceylonica* Lamarck, Ann. Mus. Paris, VII, p. 420.
1817. *Venus coaxans* Dillwyn, Descr. Cat., I, p. 177.
1818. *Cyrena zeylanica* Lamarck, Anim. sans Vertèb., V, p. 554 bis.
1818. *Cyclas ceylanica* Blainville, Dict. Sci. Nat., XII, p. 279.
1824. *Cyrena zeylanica* Dubois, Epitome, p. 66.
1825. *Cyrena zeylanica* Sowerby, Cat. Tankerville, p. 12.
1825. *Cyclas zeylanica* Blainville, Man. Malacol., p. 552, pl. LXXIII, fig. 2.
1825. *Venus coaxans* Wood, Ind. Test., p. 35, pl. VII, fig. 42.
1828. *Cyclas zeylanica* Blainville, Dict. Sci. Nat., LVII, p. 336, pl. CIII, fig. 2.
1830. *Cyrena ceylanica* Deshayes, Encyclopéd. Méthod., II, p. 49.
1835. *Cyrena Zeylanica* Deshayes, in Lamarck, Anim. sans Vertèb., VI, p. 276.
1840. *Cyrena zeylanica* Pfeiffer, Krit. Reg., p. 63.
1842. *Cyrena Zeylanica* Hanley, Rec. Biv. Shells, p. 93.
1844. *Cyrena Zeylanica* Potiez & Michaud, Gal. Douai, II, p. 191.
1845. *Cyrena Zeylanica* Catlow & Reeve, Conch. Nomencl., p. 31.
1847. *Cyrena zeylanica* Gray, Proc. Zool. Soc. London, p. 184.
1849. *Cyrena ceylonica* Mousson, Land, Süssw. Moll. Java, p. 89, pl. XIII.
1850. *Cyrena ceylonica* Philippi, Abbild. Beschreib. Conch., III, p. 108, *Cyrena*, pl. III, fig. 3.
1853. *Cyrena zeylanica* Gray, Ann. Mag. Nat. Hist., (2) XI, p. 39.
1853. *Cyrena zeylanica* Philippi, Handbuch Conch. Malacol., p. 314.
1854. *Cyrena pallida* and *C. zeylanica* Deshayes, Cat. Conch. Brit. Mus., II, *Petricolidae*, etc., pp. 247, 248.
1855. *Cyrena zeylanica* Berge, Conchylienbuch, p. 52.
1856. *Venus coaxans* Hanley, in Wood, Ind. Test., p. 46, pl. VII, fig. 42.
1857. *Venus coaxans* Römer, Krit. Unters., p. 71.
1857. *Cyrena Ceylanica* and *C. pallida* Adams, H. & A., Gen. Rec. Moll., II, p. 446.
1860. *Cyrena Ceylanica* and *C. pallida* Reeve, Elem. Conch., II, p. 116.
1862. *Cyrena ceylanica* Chenu, Man. Conchyliol., II, p. 103, fig. 462.
1867. *Cyrena Ceylanica* Mitchell, Cat. Mus. Madras, p. 66.
1869. *Cyrena ceylanica* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 883.
1870. *Cyrena Ceylanica* Prime, Amer. Journ. Conch., V, p. 143.

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1) Children, J. G. — Quart. Journ. Sci. Lit. Arts, XIV, p. 311 (1822).
2) Stewart, R. B. — Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 196 (1930).
3) Gray, J. E. — Proc. Zool. Soc. London, p. 184 (1847).

1876. *Cyrena Ceylanica* Sowerby in Reeve, Conch. Icon., XX, *Cyrena*, pl. XIX, fig. 111.
1877. *Cyrena ceylonica* Clessin in Martini-Chemn., Conch.-Cab. (N. F.), IX, (3), *Cycladeen*, p. 102, pl. XVII, figs. 1, 2, pl. XVIII, figs. 1, 2.
1878. *Cyrena ceylonica* Kobelt, Illustr. Conchylienbuch, p. 341, pl. C, fig. 9.
1884. *Cyrena Ceylanica* Grasset, Ind. Test. Viv., p. 270.
1890. *Cyrena Ceylonica* and *C. pallida* Paetel, Cat. Conch. Samm., III, pp. 97, 98.
1891. *Cyrena Ceylanica* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 235.
1904. *Cyrena ceylanica* Fischer, H. & Dautzenberg, Mission Pavie, Moll., p. 440.
1915. *Cyrena ceylonica* Preston, Faun. Brit. Ind. Freshw. Moll., p. 202.
1921. *Cyrena ceylonica* Prashad, Rec. Ind. Mus., XXII, p. 142, pl. XX, figs. 11—13.

SOLANDER's specific name *erosa* must have priority over GMELIN's later *coaxans* and the later Lamarckian *zeylanica*. *G. erosa* is a widespread species, and specimens even from the same locality differ in form, sculpture and thickness of shells.

Distribution: — *G. erosa* is the common species of the Indian Ocean, and its range extends further east into the Pacific Ocean.

In the "Siboga" collection it is represented by shells dredged at St. 164 (1° 42'.5 S., 130° 47',5 E., 32 metres).

2. *Geloina bengalensis* (Lamarck).

1818. *Cyrena Bengalensis* Lamarck, Anim. sans Vertèb., V, p. 564.
1824. *Cyrena Bengalensis* Dubois, Epitome, p. 66.
1825. *Cyrena Bengalensis* Sowerby, Cat. Tankerville, p. 12.
1834. *Cyrena turgida* Lea, Trans. Amer. Phil. Soc., V, p. 109, pl. XVIII, fig. 53.
1834. *Cyrena turgida* Lea, Observ. Gen. Unio, I, p. 221, pl. XVIII, fig. 53.
1835. *Cyrena Bengalensis* Deshayes, in Lamarck, Anim. sans Vertèb., VI, p. 276.
1841. *Cyrena bengalensis* Delessert, Rec. Coq. Lamarck, pl. VII, figs. 6*a*, *b*.
1842. *Cyrena Bengalensis* and *C. turgida* Hanley, Rec. Biv. Shells, p. 93.
1845. *Cyrena Bengalensis* Catlow & Reeve, Conch. Nomencl., p. 30.
1848. *Cyrena Bengalensis* Chenu, Illustr. Conchyliol., *Cyrena*, pl. II, figs. 6*a*—*c*.
1854. *Cyrena turgida* and *C. Bengalensis* Deshayes, Cat. Conch. Brit. Mus., *Petricolidae*, etc., II, pp. 242, 243.
1856. *Cyrena Bengalensis* and *C. turgida* Hanley, Rec. Biv. Shells, Appendix, p. 7, pl. XIII, fig. 14, p. 10, pl. XIV, fig. 50.
1857. *Cyrena Bengalensis* and *C. turgida* Adams, H. & A., Gen. Rec. Moll., II, p. 446.
1867. *Cyrena Bengalensis* Mitchell, Cat. Mus. Madras, p. 66.
1870. *Cyrena Bengalensis* Prime, Amer. Journ. Conch., V, p. 142.
1876. *Cyrena Bengalensis* Sowerby, in Reeve Conch. Icon., XX, *Cyrena* pl. VII, fig. 23.
1878. *Cyrena bengalensis* Kobelt, Illustr. Conchylienbuch, p. 341.
1879. *Cyrena bengalensis* Clessin in Martini-Chemn., Conch.-Cab. (N. F.), IX, (3), *Cycladeen*, p. 107, pl. XIII, figs. 1, 2, pl. XVII, figs. 4, 6.
1890. *Cyrena Bengalensis* and *C. turgida* Paetel, Cat. Conch. Samm., III, pp. 97, 99.
1915. *Cyrena bengalensis* Preston, Faun. Brit. Ind., Freshw. Moll., p. 205.
1921. *Cyrena bengalensis* Prashad, Rec. Ind. Mus., XXII, p. 38, pl. XX, figs. 1, 2.

As a result of a careful examination of the types of the Deshayesian species and the collections in the British Museum (Nat. Hist.), London, I am of opinion that in addition to *Cyrena turgida* Lea included in the synonymy given above, *Cyrena sinuosa* Deshayes 1) and

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1) DESHAYES, G. P. — Proc. Zool. Soc. London (volume for 1854), p. 18 (1855).

probably *C. impressa* Deshayes [1], *C. fallax* Deshayes [2] and *C. eximia* Dunker [3] should also be referred to this widespread and highly variable species.

Distribution: — *G. bengalensis* has a wide range in the Indo-Pacific Region.

In the "Siboga" collection there are four shells collected from the river of Maros.

3. *Geloina expansa* (Mousson).

1849. *Cyrena expansa* Mousson, Land, Süssw. Moll. Java, p. 89, pl. XIV.
1854. *Cyrena expansa* Deshayes, Cat. Conch. Brit. Mus., II, p. 243.
1857. *Cyrena expansa* Adams, H. & A., Gen. Rec. Moll., II, p. 446.
1860. *Cyrena expansa* Reeve, Elem. Conch., II, p. 116.
1870. *Cyrena expansa* Prime, Amer. Journ. Conch., V, p. 144.
1877. *Cyrena expansa* Clessin in Martini-Chemn., Conch.-Cab. (N. F.), IX (3) *Cycladeen*, p. 105, pl. XV, fig. 5.
1890. *Cyrena expansa* Paetel, Cat. Conch. Samm., III, p. 98.
1897. *Cyrena expansa* von Martens in Weber's Ergebn. Reise Ost. Ind., IV, Süss. Brackw. Moll., p. 95.
1908. *Cyrena expansa* von Martens, Mittheil. Zool. Mus. Berlin, IV, p. 290.

Von Martens has discussed this species in detail. Specimens from different localities differ in regards to the shells being moderately tumid or somewhat compressed. The sculpture is not well developed.

Distribution: — *G. expansa* has so far been recorded from Java and Borneo.

In the "Siboga" collection there are two shells of the species collected in the Anchorage off Beo, Karakelang Islands (St. 131).

Genus **Batissa** Gray.

1853. *Batissa* Gray, Ann. Mag. Nat. Hist., (2) XI, p. 38.
1854. *Batissa* Deshayes, Cat. Conch. Brit. Mus., II, *Petricolidae*, etc., p. 219.
1897. *Batissa* von Martens, Weber's Zool. Ergebn. Reise Ost. Ind., IV, Süss. Brackw. Moll., p. 101.
1903. *Batissa* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1453.
1921. *Batissa* Prashad, Rec. Ind. Mus., XXII, p. 145.

The genus *Batissa* was proposed by Gray for Cyrenoid species with large, heavy ovate shells in which the nacreous layer is usually of a violet or salmon colour, and the lateral teeth are secrated.

No genotype was designated by Gray, but he cited *B. tenebrosa* (Hinds) and *B. obesa* (Hinds) as examples. Later authors have indiscriminately cited *B. tenebrosa* (Hinds) and *B. violacea* (Lamarck) as the genotype.

1. *Batissa violacea* (Lam.).

1797. Bruguière, Encyclopéd. Méthod., pl. CCCI, figs. 1*a*, *b*.
1806. *Cyclas violacea* Lamarck, Annal. Mus. d'Hist. Nat. Paris, VII, p. 421.
1818. *Cyrena violacea* Lamarck, Anim. sans Vertèb., V, p. 563.
1824. *Cyrena violacea* Dubois, Epitome, p. 66.

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[1] Deshayes, G. P. — Proc. Zool. Soc. London (volume for 1854), p. 18 (1855).

[2] id., ibid., p. 15 (1854).

[3] Dunker, W. — Zeitschr. Malakozool., IX, p. 51 (1852).

1825. *Cyrena violacea* Sowerby, Cat. Tankerville, p. 12.
1830. *Cyrena violacea* Deshayes, Encyclopéd. Méthod., II, p. 49.
1835. *Cyrena violacea* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 275.
1841. *Cyrena violacea* Delessert, Rec. Coq. Lamarck, pl. VII, figs. 5*a—d.*
1845. *Cyrena violacea* Catlow & Reeve, Conch. Nomencl., p. 30.
1847. *Cyrena violacea* Gray, Proc. Zool. Soc. London, p. 184.
1848. *Cyrena violacea* Chenu, Illustr. Conchyliol., *Cyrena*, pl. II, figs. 5*a—d.*
1849. *Cyrena violacea* Mousson, Land, Süssw. Moll. Java, p. 88, pl. XV. fig. 1.
1850. *Cyrena violacea* Philippi, Abbild. Beschreib. Conch., III, p. 108, *Cyrena*, pl. III, fig. 2.
1854. *Batissa violacea* Deshayes, Cat. Conch. Brit. Mus., II, *Petricolidae* etc., p. 238.
1855. *Batissa violacea* Berge, Conchylienbuch, p. 52, pl. IV, fig. 13.
1857. *Batissa violacea* Adams, H. & A., Gen. Rec. Moll., II, p. 448.
1860. *Batissa violacea* Prime, Ann. Lyc. Nat. Hist. N. York, VII, p. 4.
1860. *Cyrena violacea* Reeve, Elem. Conch., II, p. 117.
1862. *Batissa violacea* Chenu, Man. Conchyliol., II, p. 104, figs. 470—472.
1870. *Batissa violacea* Prime, Amer. Journ. Conch., V, p. 140.
1876. *Cyrena violacea* Sowerby in Reeve, Conch. Icon., XX, *Cyrena*, pl. V, fig. 15.
1878. *Batissa violacea* Kobelt, Illustr. Conchylienbuch, p. 342, pl. C, fig. 8.
1879. *Batissa violacea* Clessin, in Martini-Chemn. Conch.-Cab. (N. F.), IX (3) *Cycladeen*, p. 208, pl. XXXIII, fig. 5.
1884. *Batissa violacea* Grasset, Ind. Test. Viv., p. 271.
1884. *Batissa violacea* Tryon, Struct. Syst. Conch., III, p. 185, pl. CXIV, figs. 41—43.
1890. *Batissa violacea* Paetel, Cat. Conch. Samm., III, p. 105.
1897. *Batissa violacea* vars. *Celebensis*, *Macassarica*, *discoidea* and *extensa* von Martens, Weber's Zool. Ergebn. Reise Ost. Ind., IV, Süss. Brackw. Moll., pp. 104—108, pl. V, figs. 3, 6, 7, 8, 9.
1898. *Batissa violacea* var. *celebensis* von Martens, P. & F. Sarasin, Süsswasser-Moll. von Celebes, p. 92.
1899. *Batissa violacea* Dautzenberg, Ann. Soc. Roy. Malacol. Belgique, XXXIV, p. 26, pl. II, fig. 12 (var. *discoidea* von Martens).
1925. *Batissa violacea* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N⁰. IX, p. 268.

The shells from the "Siboga" collection, which I assign to *B. violacea* (Lam.) agree with the description of the variety *celebensis* von Martens, but in large series of specimens there are shells which bridge over the gaps between the different varieties, and it is not possible to separate them as distinct varieties or geographical races.

Distribution: — *B. violacea* has a wide range round the islands of the Dutch East Indies and is also found round New Guinea and the Philippines.

The "Siboga" shells were collected in the Anchorage off Beo, Karakelang Islands (St. 131).

Family TELLINIDAE.

Genus **Tellina** Linn.

1758. *Tellina* Linnaeus, Syst. Nat. (ed. X), p. 674.
1799. *Tellina* Lamarck, Mem. Soc. Hist. Nat. Paris, p. 84.
1878. *Tellina* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) 1, p. 228.
1900. *Tellina* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1004.
1900. *Tellina* Dall, Proc. U. S. Nat. Mus., XXIII, p. 289.
1928. *Tellina* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 166.
1930. *Tellina* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰. 3, 199.

The question of the subdivisions of the genus *Tellina* is highly involved, and in spite of the valuable works of BERTIN and DALL needs revision.

The genus *Tellina* of LINNAEUS was a heterogenous group, and for an account of the opinions of different workers as to its limits reference may be made to DALL's useful summary in his second work, cited above. In the following account the genus *Tellina* and subgenus *Tellina s. s.*, are adopted as restricted by DALL, and the same author's synonymy of these groups is accepted as correct. DALL is, however, wrong in suggesting that *T. virgata* Linn. is the type of the genus, for CHILDREN [1]) designated *T. radiata* Linn. as the genotype in 1882.

The other subgenera represented in the collection are *Arcopagia* Leach [2]) — type *Tellina* (*Arcopagia*) *crassa* (Pennant), *Pseudarcopagia* Bertin [3]) — type *Tellina* (*Pseudarcopagia*) *decussata* Lam., *Phylloda* Schumacher [4]) — type *Tellina* (*Phylloda*) *foliacea* Linn., *Angulus* Megerle [5]) — type *Tellina* (*Angulus*) *lanceolata* (Linn.), and *Peronidia* Dall [6]) — type *Tellina* (*Peronidia*) *albicans* Gmelin.

1. *Tellina* (*Tellina*) *virgata* (Linn.).

1741. *Tellina virgata* Rumph, Amboin. Rarit., p. 147, pl. XLV, fig. H.
1742. *Chama inaequilatera* etc. Gualtieri, Ind. Test., p. 86, figs. G, G.
1742. *Tellina laevis* etc. D'Argenville, Hist. Nat., pp. 327, 330, pl. XXV, fig. G.
1758. *Tellina virgata* Linnaeus, Syst. Nat., (ed. X), p. 674.
1764. *Tellina virgata* Linnaeus, Mus. Lud. Ulr., p. 477.
1765. *Le Rayon* etc. Knorr, Délices Yeux, II, pl. XXI, fig. 4.
1767. *Tellina virgata* Linnaeus, Syst. Nat., (ed. XII), p. 1116.
1780. *Moule* Favanne, La Conch., pl. XLIX, fig. F 2.
1782. *Tellina Virgata Linnaei* etc. (ex parte) Chemnitz, Conch.-Cab., VI, p. 86, pl. VIII, fig. 67.
1784. *Tellina subrubicunda* Martyn, Universal Conch., pl. CLVI (right figure).
1788. *Tellina virgata* (ex parte) Schröter, Conch.-Cab. Namen Reg., p. 103.
1790. *Tellina virgata* Gmelin, Syst. Nat., (ed. XIII), p. 3229.
1797. Bruguière, Encyclopéd. Méthod., pl. CCLXXXVIII, fig. 2.
1797. *Tellina virgata* Humphrey, Mus. Calonnianum, p. 47.
1798. *Tellina virgata* Röding, Mus. Boltenianum, p. 185.
1802. *Tellina virgata* Bosc, Hist. Nat. Coq., III, p. 19, pl. XVIII, fig. 3.
1805. *Tellina virgata* De Roissy in Buffon, Hist. Nat. Moll., VI, p. 365, pl. LXIX, fig. 1.
1817. *Tellina virgata* and *T. marginalis* Dillwyn, Descr. Cat., I. p. 74.
1818. *Tellina virgata* Lamarck, Anim. sans Vertèb., V, p. 521.
1824. *Tellina virgata* Dubois, Epitome, p. 57.
1825. *Tellina virgata* Sowerby, Cat. Tankerville, p. 9.
1825. *Tellina virgata* Wood, Ind. Test., p. 17, pl. III, fig. 3.
1828. *Tellina virgata* Blainville, Dict. Sci. Nat., LII, p. 531.
1832. *Tellina virgata* Deshayes, Encyclopéd. Méthod., III, p. 1008.
1835. *Tellina virgata* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 189.
1843. *Tellina Virgata* and *T. Marginalis* Hanley, Rec. Biv. Shells, p. 61.
1845. *Tellina marginalis* and *T. virgata* Catlow & Reeve, Conch. Nomencl., p. 26.
1846. *Tellina virgata* and *T. marginalis* Hanley in Sowerby, Thes. Conch., I, p. 228, pl. LVIII, figs. 204, 212; p. 229, pl. LXIII, fig. 216.

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1) CHILDREN, J. G. — Quart. Journ. Sci. Lit. Arts, XIV, p. 306 (1822).
2) LEACH, W. E., in Brown Illustr. Rec. Conch. Great Britain, pl. II, pl. XVI, fig. 8 (1827).
3) BERTIN, V. — Nouv. Archiv. Mus. d'Hist. Nat. Paris, (2) I, pp. 229, 264 (1878).
4) SCHUMACHER, H. C. F. — Essai Nouv. Syst., p. 148 (1817).
5) MEGERLE, v. M., J. G. — Mag. Ges. Naturfor. Freund., V, p. 47 (1811).
6) DALL, W. H. — Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1014 (1900) and Proc. U. S. Nat. Mus., XXIII, p. 291 (1900).

1853. *Tellina virgata* Mörch, Cat. Yoldi, II, p. 13.
1855. *Tellina virgata* Hanley, Ipsa Linn. Conch., p. 33.
1855. *Tellina virgata* Berge, Conchylienbuch, p. 42.
1856. *Tellina virgata* Hanley in Wood, Ind. Test., p. 21, pl. III, fig. 3.
1856. *Tellina* (*Tellinella*) *virgata* Adams, H. & A., Gen. Rec. Moll., II, p. 395.
1858. *Tellina virgata* Fischer, P., Journ. Conchyliol., VII, p. 335.
1860. *Tellina virgata* Reeve, Elem. Conch., II, p. 67.
1862. *Tellina* (*Tellinella*) *virgata* Chenu, Man. Conchyliol., II, p. 67.
1866. *Tellina virgata* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XIII, figs. 59*a*, *b*.
1866—67. *Tellina Jubar* and *T. marginalis* Sowerby, op. cit., pl. XI, fig. 48, pl. XIX, fig. 48, *b*; pl. XIX, fig. 98.
1867. *Tellina virgata* Mitchell, Cat. Mus. Madras, p. 63.
1868. *Tellina* (*Tellinella*) *virgata* Tryon, Amer. Journ. Conch., p. 86.
1869. *Tellina* (*Tellinella*) *virgata* Dunker, Cat. Mus. Godeffroy, IV, p. 108.
1869. *Tellina virgata* von Martens, von Decken's Reise, p. 65.
1869. *Tellinella virgata* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 880.
1870. *Tellina* (*Tellinella*) *virgata* and vars. *a*, *b*, Römer, in Martini-Chemn. Conch.-Cab. (N. F.), X (4), *Tellina*, p. 16, pl. II, fig. 8, 9, pl. VII, figs. 1—5.
1872. *Tellina virgata* von Martens, Malakozool. Blätt., XIX, p. 37.
1874. *Tellina* (*Tellinella*) *virgata* Dunker, Cat. Mus. Godeffroy, V, p. 166.
1878. *Tellina virgata* Kobelt, Illustr. Conchylienbuch, p. 328, pl. XCVI, fig. 3.
1878. *Tellina* (*Tellinella*) *virgata*, *T.* (*T.*) *marginalis* and *T.* (*T.*) *jubar* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, pp. 231, 232.
1879. *Tellina virgata* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 744.
1880. *Tellina* (*Tellinella*) *virgata* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 329.
1881. *Tellinella virgata* de Rochebrune, Bull. Soc. Philomat. Paris, (7), V, p. 8.
1884. *Tellina virgata* Grasset, Ind. Test. Viv., p. 256.
1884. *Tellina* (*Tellinella*) *virgata* Tryon, Struct. Syst. Conch., IV, p. 168.
1887. *Tellina* (*Eutellina*, *Tellinella*) *virgata* Fischer, P., Man. Conchyliol., p. 1147.
1890. *Tellina* (*Tellinella*) *virgata* vars. *jubar* and *marginalis* Paetel, Cat. Conch. Samm., III, p. 52.
1891. *Tellina virgata* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 245.
1892. *Tellina virgata* Tate, Trans. Roy. Soc. S. Australia, XV, p. 133.
1896. *Tellina* (*Tellinella*) *virgata* Casto de Elera, Cat. Sist. Filip., p. 730.
1897. *Tellina virgata* Sowerby, Mar. Shells S. Africa, Supplement, p. 22.
1899. *Tellina* (*Tellinella*) *virgata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 200.
1900. *Tellina virgata* Dall, Proc. U. S. Nat. Mus., XXIII, p. 289.
1901. *Tellina virgata* Sturany, Denkschr. Kais. Akad. Wien, Math. Nat., XLIX, p. 278.
1902. *Tellina virgata* Shopland, Proc. Malacol. Soc. London, V, p. 177.
1903. *Tellina virgata* Hidalgo, Obras Malacol., II, p. 102.
1905. *Tellina virgata* Hidalgo, Cat. Filip., p. 318.
1906. *Tellina virgata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1906. *Tellina* (*Tellinella*) *virgata* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 294.
1906. *Tellina* (*Tellinella*) *virgata* var. *jubar* Melvill & Standen, Proc. Zool. Soc. London, p. 819.
1907. *Tellina virgata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 207.
1909. *Tellina virgata* Lamy, Mém. Soc. Zool. France, XXII, p. 342.
1909. *Tellina virgata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 469.
1910. *Tellina virgata* Hedley, Austral. Ass. Adv. Sci., XII, p. 350.
1910. *Tellina virgata* Dautzenberg, Bull. Inst. Océanogr., N°. 161, p. 3.
1911. *Tellina virgata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 133.
1916. *Tellina virgata* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 167.
1925. *Tellina* (*Tellina*) *virgata* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N° 9, p. 305.
1928. *Tellina* (*Tellina*) *jubar* and *T.* (*T.*) *virgata* Faustino, Summary Philippine Mar. Freshw. Moll., pp. 86, 91.

1929. *Tellina jubar* and *T. virgata* Dautzenberg, Faun. Colon. Francais., III, pp. 625, 628.
1930. *Tellina virgata* Cox, Mon. Geol. Dept. Hunterian Mus. Glasgow Univ., N⁰ 4, p. 156.

I have carefully examined the collections of the Tellinidae in the British Museum (Nat. Hist.), London, and agree with MELVILL & STANDEN and the more recent suggestion of OOSTINGH that *T. marginalis* Dillwyn and *T. jubar* Hanley are based on only slight variations of *T.* (*T.*) *virgata.*

Distribution: *T.* (*T.*) *virgata* is widely distributed in the Indo-Pacific, and is also known to occur in the Red sea and the Persian Gulf.

The "Siboga" Expedition collected two shells from the Ambon Reef.

2. *Tellina* (*Tellina*) *verrucosa* Hanley.

1844. *Tellina verrucosa* Hanley, Proc. Zool. Soc. London, p. 60.
1845. *Tellina verrucosa* Catlow & Reeve, Conch. Nomencl., p. 26.
1846. *Tellina verrucosa* Hanley in Sowerby, Thes. Conch., I, p. 225, pl. LVIII, fig. 77.
1856. *Tellina* (*Tellinella*) *verrucosa* Adams, H. & A., Gen. Rec. Moll., II, p. 395.
1860. *Tellina verrucosa* Reeve, Elem. Conch., II, p. 126.
1867. *Tellina verrucosa* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XIX, fig. 96.
1870. *Tellina* (*Tellinella*) *verrucosa* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (4), *Tellina*, p. 23, pl. IX, figs. 1—3.
1878. *Tellina verrucosa* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 239.
1889. *Tellina* (*Tellinella*) *verrucosa* Smith, "Challenger" Lamellibranchia, p. 100.
1890. *Tellina* (*Tellinella*) *verrucosa* Paetel, Cat. Conch. Samm., III, p. 52.
1896. *Tellina* (*Tellinella*) *verrucosa* Casto de Elera, Cat. Sist. Filip., p. 730.
1903. *Tellina verrucosa* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 627.
1903. *Tellina verrucosa* Hidalgo, Obras Malacol., II, p. 107.
1903. *Tellina verrucosa* Hidalgo, Cat. Filip., p. 317.
1925. *Tellina verrucosa* Faustino, Summary Philippine Mar., Freshw. Moll., p. 91.

As SMITH pointed out *T. verrucosa* has the same type of sculpture as *T. asperrima* Hanley, *T. pulcherrima* Sowerby and *T. semiaspera* Deshayes, but the shells of this species are narrower, more triangular and more rostrate.

Distribution: — *T.* (*T.*) *verrucosa* has been recorded from the Philippines and Tongatabu.

The "Siboga" Expedition collected two typical shells of the species at the Anchorage off Kampong Kelang, south coast of Manipa Island (St. 184).

3. *Tellina* (*Tellina*) *pulcherrima* Sowerby.

1825. *Tellina pulcherrima* Sowerby, Cat. Tankerville, p. 10, Appendix, p. 3, pl. I, fig. 1.
1835. *Tellina pulcherrima* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 208.
1842. *Tellina Pulcherrima* Hanley, Recent Biv. Shells, p. 67.
1845. *Tellina pulcherrima* Catlow & Reeve, Conch. Nomencl., p. 24.
1846. *Tellina pulcherrima* Hanley in Sowerby, Thes. Conch., I, p. 226, pl. LXI, fig. 165.
1856. *Tellina Pulcherrima* Hanley, Rec. Biv. Shells, Appendix, p. 5, pl. XI, fig. 14.
1856. *Tellina* (*Tellinella*) *pulcherrima* Adams, H. & A., Gen. Rec. Moll., II, p. 395.
1860. *Tellina pulcherrima* Reeve, Elem. Conch., II, p. 126.
1867. *Tellina pulcherrima* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXI, fig. 108.
1868. *Tellina* (*Tellinella*) *pulcherrima* Tryon, Amer. Journ. Conch. IV, p. 84.
1870. *Tellina* (*Tellinella*) *pulcherrima* Römer, in Martini-Chemn. Conch.-Cab. (N. F.), X (4), *Tellina*, p. 24.
1871. *Tellina pulcherrima* Lischke, Japan. Meeresconch., II, p. 172.
1874. *Tellina pulcherrima* Lischke, Japan. Meeresconch., III. p. 92.

1878. *Tellina pulcherrima* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 240.
1882. *Tellina pulcherrima* Dunker, Ind. Moll. Mar. Japon., p. 189.
1884. *Tellina pulcherrima* Grasset, Ind. Test. Viv., p. 256.
1890. *Tellina* (*Tellinella*) *pulcherrima* Paetel, Cat. Conch. Samm., III, p. 49.
1895. *Tellina pulcherrima* Pilsbry, Cat. Mar. Moll. Japan, p. 123.
1903. *Tellina pulcherrima* Hidalgo, Obras Malacol., II, p. 109.
1905. *Tellina pulcherrima* Hidalgo, Cat. Filip., p. 315.
1906. *Tellina pulcherrima* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1906. *Tellina pulcherrima* Owston, Japan. Loochooan Shells, p. 37.
1909. *Tellina pulcherrima* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nath. Math., (7), V, p. 188.
1910. *Tellina pulcherrima* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1928. *Tellina pulcherrima* Faustino, Summary Philippine Mar., Freshw. Moll., p. 88.

The single left valve from the "Siboga" collection, which I refer to *T.* (*T.*) *pulcherrima* is not full grown, and has not developed the characteristic sculpture of this species.

Distribution: — *T.* (*T.*) *pulcherrima* is widely distributed in the Indo-Pacific Region.

The "Siboga" Expedition collected a single young valve of this species at the Anchorage off Djangkar, Java (St. 4).

4. *Tellina* (*Tellina*) *asperrima* Hanley.

1844. *Tellina asperrima* Hanley, Proc. Zool. Soc. London, p. 59.
1846. *Tellina asperrima* Hanley in Sowerby, Thes. Conch., I, p. 226, pl. LX, fig. 135.
1850. *Tellina asquamulosa* Adams, H. & A., Proc. Zool. Soc. London (vol. for 1849), p. 169, pl. VI, fig. 1.
1856. *Tellina asperrima* and *T. squammulosa* (sic) Adams, H. & A., Gen. Rec. Moll., II, p. 395.
1860. *Tellina asperrima* Reeve, Elem. Conch., II, p. 125.
1867. *Tellina asperrima* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXXV, fig. 198.
1868. *Tellina* (*Tellinella*) *asperrima* and *T.* (*T.*) *squammulosa* (sic) Tryon, Amer. Journ. Conch., IV, pp. 82, 85.
1869. *Tellina squammulosa* (sic) Sowerby, op. cit., pl. LVIII, fig. 343.
1870. *Tellina asperrima* Römer, in Martini-Chemn. Conch. Cab. (N. F.), X (4), *Tellina*, p. 24.
1878. *Tellina asperrima* and *T.* (*Tellinides*) *squamulosa* Bertin, Nouv. Archiv. Mus. d'Hist. Nat. Paris, (2) I, pp. 240, 305.
1890. *Tellina* (*Tellinella*) *asperrima* and *T. squamulosa* Paetel, Cat. Conch. Samm., III, pp. 43, 51.
1903. *Tellina asperrima* Hidalgo, Obras Malacol., II, p. 108.
1905. *Tellina asperrima* Hidalgo, Cat. Filip., p. 313.
1910. *Tellina asperrima* and *T. squamulosa* Hedley, Austral. Ass. Adv. Sci., XII, p. 349, 350.
1925. *Tellina asperrima* Faustino, Summary Philippine Marine, Freshw. Moll., p. 84.
1929. *Tellina asperrima* Dautzenberg, Faun. Colon. Francais., III, p. 625.

SOWERBY's reference of *Tellina squamulosa* to DESHAYES "Proc. Zool., 1840, p. 161", is certainly incorrect, and the shell figured by him is only a bleached valve of *T. asperrima*. ADAM's name *T. squamulosa* is also to be included in the synonymy of *T.* (*T.*) *asperrima*.

The surface of the valves is provided with minute pointed spines except in the beak area; here the concentric striae are better developed and form regular ridges.

Distribution: — *T.* (*T.*) *asperrima* has been recorded from the Philippines, Australia and Madagascar.

In the "Siboga" collection it is represented by a single right valve collected at the Anchorage off Djangkar, Java (St. 4).

5. *Tellina* (*Tellina*) *emarginata* (Sowerby).

1825. *Tellinides emarginata* Sowerby, Cat. Tankerville, p. 2, Appendix, p. III.
1843. *Tellinides Emarginatus* Hanley, Rec. Biv. Shells, p. 74, pl. XIII, fig. 55.
1845. *Tellina emarginata* Catlow & Reeve, Conch. Nomencl., p. 23.
1846. *Tellina* (*Tellinides*) *emarginata* Hanley in Sowerby, Thes. Conch., I, p. 290, pl. LVII, fig. 70.
1856. *Tellina* (*Tellinides*) *emarginata* Adams, H. & A., Gen. Rec. Moll., II, p. 398.
1860. *Tellina emarginata* Reeve, Elem. Conch., p. 125.
1867. *Tellina emarginata* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XX, fig. 99.
1868. *Tellina* (*Tellinides*) *emarginata* Tryon, Amer. Journ. Conch., IV, p. 95.
1872. *Tellina* (*Tellinides*) *emarginata* Römer, in Martini-Chemn. Conch. Cab., (N. F.), X (4), *Tellina*, p. 177, pl. XXXVI, figs. 1—3.
1887. *Tellina* (*Tellinides*) *emarginata* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 216.
1890. *Tellina* (*Tellinides*) *emarginata* Paetel, Cat. Conch. Samm., III, p. 45.
1893. *Tellina emarginata* Melvill & Abercrombie, Mem. Proc. Manchester Lit. Phil. Soc. (4) VII, p. 33.
1899. *Tellina* (*Tellinides*) *emarginata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 201.
1906. *Tellina* (*Tellinides*) *emarginata* Melvill & Standen, Proc. Zool. Soc. London, p. 822.
1910. *Tellina emarginata* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.

I refer a single right valve from Macassar to Sowerby's species. This valve agrees with the descriptions and figures of the species, but differs in the postumbonal region being much shorter than is shown in Sowerby's figure of the *T. emarginata*; the umbones in the "Siboga" shell lie in the posterior third of the length.

Distribution: — *T.* (*T.*) *emarginata* has a wide range in the Indo-Pacific.

The single valve, which I refer with some doubt to this species, was collected at Macassar (St. 71).

6. *Tellina* (*Tellina*) *deshayesii* Hanley. (Plate V, fig. 33).

1844. *Tellina Deshayesii* Hanley, Proc. Zool. Soc. London, p. 148.
1846. *Tellina Deshayesii* Hanley in Sowerby, Thes. Conch., I, p. 223, pl. LVII, fig. 66.
1867. *Tellina Deshayesii* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXXV, fig. 200.
1878. *Tellina* (*Tellinella*) *deshayesii* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2), I, p. 251.

A single left valve in the "Siboga" collection is referred with some doubt to *T.* (*T.*) *deshayesii*, which was described by Hanley from a single valve from the supposed locality Red Sea. The valve in the "Siboga" collection is a half-grown specimen, and it is not possible to be quite certain; I figure this specimen for reference.

Distribution: — As noted above the single type-shell was supposed to have come from the Red Sea. According to Bertin the single valve in the Paris Museum, which was purchased from the collection of Wright, also had Red Sea on its label.

The "Siboga" Expedition collected a single left valve at the Anchorage off Noimini, south coast of Timor (St. 296).

7. *Tellina* (*Tellina*) *patagiata* sp. nov. (Plate V, figs. 34, 35).

The following is a description of this new species: — Shell small, subovate, subequilateral; anterior end narrowly rounded, basal margin evenly but slightly arcuate, posterior end feebly and rather obliquely rostrate, obliquely truncate with two radial folds separated by a concave furrow; umbones not very prominent, smooth; lunule very narrow, impressed; escutcheon somewhat broader, smooth; surface sculpture consisting of widely separated, raised, concentric ridges, these become finely tuberculate on posterior half of shells, very fine radial threads also present; hinge normal *Tellina*-type. Shell of light yellow colour, nacre shining white.

Measurements of Holotype: — Length 9 mm., height 5.7 mm., diameter 2.9 mm.

Habitat: — The unique Holotype was dredged at St. 260 (5° 36′.5 S., 132° 55′.2 E., 90 metres).

Remarks: — *T.* (*T.*) *patagiata* is a beautiful species of a small size with a downwardly directed rostrum, and the shell sculpture consisting of sharp ridges separated by broad interspaces; the ridges on the posterior half of the shell are thickened and cut up and appear almost tuberculated.

8. *Tellina* (*Arcopagia*) *robusta* Hanley.

1845. *Tellina robusta* Hanley, Proc. Zool. Soc. London (volume for 1844), p. 63.
1845. *Tellina robusta* Catlow & Reeve, Conch. Nomencl., p. 25.
1846. *Tellina robusta* Hanley in Sowerby, Thes. Conch., I, p. 252, pl. LVI, figs. 2, 3.
1856. *Tellina* (*Arcopagia*) *robusta* Adams, H. & A., Gen. Rec. Moll., II, p. 397.
1860. *Tellina robusta* Reeve, Elem. Conch., II, p. 126.
1868. *Tellina* (*Arcopagia*) *robusta* Tryon, Amer. Journ. Conch., IV, p. 91.
1871. *Tellina* (*Arcopagia*) *robusta* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (4), *Tellina*, p. 89, pl. XXIV, figs. 4—6.
1874. *Tellina* (*Arcopagia*) *robusta* Dunker, Cat. Mus. Godeffroy, V, p. 166.
1878. *Arcopagia robusta* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I. p. 321.
1880. *Tellina* (*Arcopagia*) *robusta* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 330.
1884. *Tellina robusta* Grasset, Ind. Test. Viv., p. 256.
1890. *Tellina* (*Arcopagia*) *robusta* Paetel, Cat. Conch. Samm., III, p. 50.
1896. *Tellina* (*Arcopagia*) *robusta* Casto de Elera, Cat. Sist. Filip., p. 726.
1899. *Tellina robusta* Hedley, Mem. Austral. Mus., III, pp. 499, 526.
1903. *Tellina robusta* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 627.
1903. *Tellina robusta* Sykes, Journ. Malacol., X, p. 138.
1903. *Arcopagia robusta* Hidalgo, Obras Malacol., II, p. 152.
1905. *Arcopagia robusta* Hidalgo, Cat. Filip., p. 320.
1906. *Arcopagia robusta* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1906. *Tellina* (*Arcopagia*) *robusta* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 209.
1909. *Tellina* (*Arcopagia*) *robusta* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 131.
1910. *Arcopagia robusta* Hedley, Austral. Ass. Adv. Sci., XII, p. 350.
1928. *Tellina* (*Linearia*) *robusta* Faustino, Summary Philippine Mar., Freshw. Moll., p. 93.
1929. *Tellina* (*Arcopagia*) *robusta* Dautzenberg, Faun. Colon. Francais., p. 630.

T. (*A.*) *robusta* is an Indo-Pacific species, and SOWERBY's West Indian Shells, which he figured under this name [1]), are incorrectly referred to this species. *T.* (*A.*) *robusta* has a subtrigonal, greatly inflated shell, having a short, subtruncated beak at the posterior extremity. A few concentric, low striae can be distinguished on the valves of fresh shells.

Distribution: — *T.* (*A.*) *robusta* is widely distributed in the Indo-Pacific.

The "Siboga" Expedition collected shells in the Madura Strait (St. 2), Bay of Pidjot,

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[1]) SOWERBY, G. B. — In Reeve, Conch. Icon., XVII, *Tellina*, pl. XVI, fig. 77 (1866).

Lombok (St. 33), Macassar (St. 71), Rumah-Kuda Bay, Roma Island (St. 279) and St. 294 (10° 12'.2 S., 124° 27'.3 E., 73 metres).

9. *Tellina* (*Arcopagia*) *pudica* Hanley.

1845. *Tellina pudica* Hanley, Proc. Zool. Soc. London (volume for 1844), p. 62.
1845. *Tellina pudica* Catlow & Reeve, Conch. Nomencl., p. 24.
1846. *Tellina pudica* Hanley in Sowerby, Thes. Conch., I. p. 246, pl. LVI, fig. 7.
1856. *Tellina* (*Arcopagia*) *pudica* Adams, H. & A., Gen. Rec. Moll., II, p. 397.
1860. *Tellina pudica* Reeve, Elem. Conch., II, p. 126.
1867. *Tellina pudica* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXXI, fig. 176.
1868. *Tellina* (*Arcopagia*) *pudica* Tryon, Amer. Journ. Conch., IV, p. 91.
1871. *Tellina* (*Arcopagia*) *pudica* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (4), *Tellina*, p. 95.
1878. *Tellina* (*Peronaea*) *pudica* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 272.
1890. *Tellina* (*Arcopagia*) *pudica* Paetel, Cat. Conch. Samm., III, p. 49.
1896. *Tellina* (*Arcopagia*) *pudica* Casto de Elera, Cat. Sist. Filip., p. 725.
1903. *Tellina pudica* Hidalgo, Obras Malacol., II, p. 124.
1905. *Tellina pudica* Hidalgo, Cat. Filip., p. 315.
1909. *Tellina* (*Arcopagia?*) *pudica* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 194, pl. III, figs. 35—37.
1928. *Tellina pudica* Faustino, Summary Philippine Mar., Freshw. Moll., p. 88.

The two stray valves, which I refer to *T.* (*A.*) *pudica*, agree with Hanley's description and figures of the species, but have a slightly longer rostrum, as was also the case with the specimens figured by Lynge from the Gulf of Siam.

Distribution: — *T.* (*A.*) *pudica* has been recorded from Japan, the Philippines and Gulf of Siam.

The "Siboga" Expedition collected two stray valves, a right and a left one, at Waru Bay, north coast of Ceram (St. 174).

10. *Tellina* (*Arcopagia*) *discus* Hanley.

1844. *Tellina Discus* Hanley, Proc. Zool. Soc. London, p. 63.
1845. *Tellina discus* Catlow & Reeve, Conch. Nomencl., p. 22.
1846. *Tellina discus* Hanley in Sowerby, Thes. Conch., I, p. 257, pl. LXIV, figs. 228, 232.
1856. *Tellina* (*Arcopagia*) *discus* Adams, H. & A., Gen. Rec. Moll., II, p. 396.
1858. *Tellina discus* Fischer, P., Journ. Conchyliol., VII, p. 355.
1860. *Tellina discus* Reeve, Elem. Conch., II, p. 125.
1862. *Tellina* (*Arcopagia*) *discus* Chenu, Man. Conchyliol., II, p. 68, fig. 283.
1868. *Tellina* (*Arcopagia*) *discus* Tryon, Amer. Journ. Conch., IV, p. 90.
1869. *Tellina discus* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. I, fig. 4.
1871. *Tellina* (*Arcopagia*) *discus* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (4), *Tellina*, p. 78, pl. XXII, figs. 1—3.
1874. *Tellina* (*Arcopagia*) *discus* Dunker, Cat. Mus. Godeffroy, V, p. 166.
1890. *Tellina* (*Arcopagia*) *discus* Paetel, Cat. Conch. Samm., III, p. 45.
1896. *Tellina* (*Arcopagia*) *discus* Casto de Elera, Cat. Sist. Filip., p. 724.
1903. *Arcopagia discus* Hidalgo, Obras Malacol., II, p. 148.
1905. *Arcopagia discus* Hidalgo, Cat. Filip., p. 319.
1928. *Arcopagia discus* Faustino, Summary Philippine Mar., Freshw. Moll., p. 92.

The shells of this species are not always so inflated as the shell figured by Sowerby, and also vary in respects to their sculpture.

Distribution: — *T.* (*A.*) *discus* was described from the Island of Ticao, Philippines, but it seems to occur also in the eastern parts of the Indian Ocean.

The "Siboga" Expedition collected shells on the Roma Reef, Ambon Reef, Elat, west coast of the Great Kei Island (St. 261) and Pepela Bay, east coast of Rotti Island (St. 301).

11. *Tellina* (*Arcopagia*) *isseli* H. Adams.

1870. *Tellina Isseli* Adams, H., Proc. Zool. Soc. London, p. 790, pl. XLVIII, fig. 10.
1870. *Tellina* (*Arcophagia* sic) *Isseli* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 446.
1878. *Arcopagia Isseli* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2), I, p. 324.
1886. *Tellina Isseli* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 106.
1890. *Tellina* (*Arcopagia*) *Isseli* Paetel, Cat. Conch. Samm., III, p. 47.
1891. *Tellina isseli* Smith, Proc. Zool. Soc. London, p. 395.
1906. *Tellina* (*Arcopagia*) *isseli* Melvill & Standen, Proc. Zool. Soc. London, p. 821.
1909. *Tellina* (*Arcopagia*) *isseli* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 192.
1918. *Tellina* (*Arcopagia*) *Isseli* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIV, p. 121.

The faint pinkish radiations on the shells of *T.* (*A.*) *isseli* mentioned by Melvill & Standen are present on all the shells collected by the "Siboga" Expedition. The sculpture, which is variable, consists of very regular, concentric but low and sharp cut ribs, which often become obsolete on the anterior and posterior slopes.

Distribution: — *T.* (*A.*) *isseli* has so far been recorded from the Red Sea to the Gulf of Siam. It has also been found in the Persian Gulf.

The "Siboga" Expedition collected two shells of this species at the Anchorage East of Dangar Besar, Saleh Bay (St. 313).

12. *Tellina* (*Arcopagia*) *inflata* Gmelin.

1782. *Tellina inflata* etc. Chemnitz, Conch.-Cab., VI, p. 91, pl. IX, fig. 76.
1788. *Tellina inflata* Schröter, Conch.-Cab. Namen Reg., p. 103.
1790. *Tellina inflata* Gmelin, Syst. Nat., (ed. XIII), p. 3230.
1798. *Tellina inflata* Spengler, Skrivt. Nat. Selsk., IV, p. 99.
1818. *Tellina striatula* Lamarck, Anim. sans Vertèb., V, p. 529.
1824. *Tellina striatula* Dubois, Epitome, p. 57.
1828. *Tellina striatula* Blainville, Dict. Sci. Nat., LII, p. 538.
1835. *Tellina striatula* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 201.
1840. *Tellina inflata* Pfeiffer, Krit. Reg., p. 57.
1843. *Tellina hippoidea* Philippi, Abbild. Beschreib. Conch., I, p. 72, *Tellina*, pl. I, fig. 3.
1846. *Tellina striatula* Hanley in Sowerby, Thes. Conch., I, p. 255, pl. LXI, fig. 175.
1855. *Tellina striatula* Berge, Conchylienbuch, p. 44.
1860. *Tellina striatula* Reeve, Elem. Conch., II, p. 126.
1866. *Tellina striatula* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. VIII, fig. 34.
1868. *Tellina* (*Tellinella*) *striatula* Tryon, Amer. Journ. Conch., IV, p. 85.
1870. *Tellina* (*Penonaeoderma*) *simplex* Adams, H., Proc. Zool. Soc. London, p. 789, pl. XLVIII, fig. 5.
1878. *Arcopagia striatula* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 320.
1879. *Tellina striatula* Brazier, Proc. Linn. Soc. N. S. Wales, IV, p. 430.
1884. *Tellina striatula* Grasset, Ind. Test. Viv., p. 256.
1886. *Tellina striatula* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 105.
1888. *Arcopagia striatula* Jousseaume, Mém. Soc. Zool. France, I, p. 199.

1890. *Tellina* (*Tellinella*) *inflata* Paetel, Cat. Conch. Samm., III, p. 47.
1891. *Tellina* (*Tellinella*) *inflata* Smith, Proc. Zool. Soc. London, p. 426.
1896. *Tellina* (*Tellinella*) *inflata* Casto de Elera, Cat. Sist. Filip., p. 729.
1901. *Tellina striatula* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 277.
1903. *Arcopagia inflata* Hidalgo, Obras Malacol., II, p. 150.
1905. *Arcopagia inflata* Hidalgo, Cat. Filip., p. 319.
1909. *Tellina* (*Arcopagia*) *inflata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 190.
1918. *Tellina* (*Arcopaginula*) *inflata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIV, p. 167.
1928. *Tellina* (*Tellina*) *striatula* Faustino, Summary Philippine Mar. Freshw. Moll., p. 90.

The determination of the subgenus to which *T. inflata* should be assigned, is a matter of some difficulty. Tryon and Smith assigned it to *Tellinella* Gray, which is a synonym of *Tellina s. s.*. Lynge placed it in *Arcopagia*, while Lamy following the manuscript notes of Dr. Jousseaume has adopted for it the new subgeneric name *Arcopaginula*. The hinge of *T. inflata* is peculiar. In young shells there are two triangular, teeth-like lateral laminae in each valve; those of the left valve being less strongly developed, while in adult shells the teeth-like laminae of the left valve, though reduced, are still distinctly visible. In the presence of these persistent laterals *T. inflata* differs from true *Arcopagia*-species, but the general form and sculpture of the shells agree with other species of this subgenus; I have, therefore, tentatively included it in *Arcopagia*.

Distribution: — *T.* (*A.*) *inflata* is widely distributed in the Indo-Pacific, and has also been recorded from the Red Sea.

The "Siboga" Expedition collected shells from the Anchorage off Djangkar, Java (St. 4), Bay of Pidjot, Lombok (St. 33), Kambaragi Bay, Tanah Djampeah (St. 64), Macassar (St. 71) and Anchorage off Beo, Karakelang Islands (St. 131).

13. *Tellina* (*Arcopagia*) *capsoides* Lamarck.

1818. *Tellina capsoides* Lamarck, Anim. sans Vertèb., V, p. 531.
1824. *Tellina capsoides* Dubois, Epitome, p. 58.
1835. *Tellina capsoides* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 205.
1843. *Tellina Capsoides* Hanley, Rec. Biv. Shells, p. 70.
1845. *Tellina capsoides* Catlow & Reeve, Conch. Nomencl., p. 22.
1847. *Tellina capsoides* Hanley in Sowerby, Thes. Conch., I, p. 268, pl. LXII, fig. 185.
1856. *Tellina* (*Arcopagia*) *capsoides* Adams, H. & A., Gen. Rec. Moll., II, p. 396.
1860. *Tellina capsoides* Reeve, Elem. Conch., II, p. 125.
1867. *Tellina capsoides* Mitchell, Cat. Mus. Madras, p. 62.
1867. *Tellina capsoides* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXXIII, figs. 183*a*, *b*.
1868. *Tellina* (*Arcopagia*) *capsoides* Tryon, Amer. Journ. Conch., IV, p. 89.
1869. *Arcopagia capsoides* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 880.
1870. *Tellina* (*Arcopagia*) *capsoides* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 446.
1871. *Tellina* (*Tellinella*) *capsoides* Römer, in Martini-Chemn. Conch.-Cab. (N. F.), X (4), *Tellina*, p. 48, pl. XIV, figs. 1—3.
1874. *Tellina* (*Tellinella*) *capsoides* Dunker, Cat. Mus. Godeffroy, V, p. 166.
1878. *Tellina capsoides* Bertin, Nouv. Arch. d'Hist. Nat. Paris, (2) I, p. 250.
1884. *Tellina capsoides* Grasset, Ind. Test. Viv., p. 254.
1886. *Tellina capsoides* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 106.
1890. *Tellina* (*Arcopagia*) *capsoides* Paetel, Cat. Conch. Samm., III, p. 44.
1892. *Tellina capsoides* Sowerby, Mar. Shells S. Africa, p. 56.

1896. *Tellina* (*Acropagia* sic) *capsoides* Casto de Elera, Cat. Sist. Filip., p. 724.
1898. *Tellina capsoides* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 47.
1903. *Tellina Capsoides* Hidalgo, Obras Malacol., II, p. 114.
1905. *Tellina Capsoides* Hidalgo, Cat. Filip., p. 313.
1906. *Tellina* (*Arcopagia*) *capsoides* Melvill & Standen, Proc. Zool. Soc. London, p. 821.
1909. *Tellina* (*Arcopagia*) *capsoides* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 189.
1910. *Tellina capsoides* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1928. *Tellina capsoides* Faustino, Summary Philippine Mar. Freshw. Moll., p. 84.
1929. *Tellina capsoides* Dautzenberg, Faun. Colon. Francais., III, p. 625.

Tellina (*Arcopagia*) *capsoides* appears to be a highly variable species. The outline of the shell is very variable and the sculpture also differs a great deal in shells of different ages. With the series of shells of this species, which I have been able to examine, I have no doubt that *Tellina denticulata* Deshayes[1] and *Tellina thymares* Melvill[2] are synonyms of *T.* (*A.*) *capsoides*. Lynge (op. cit., p. 189) has suggested that *Tellina negrosiensis* V. Bertin[3] scarcely differs specifically from *T.* (*A.*) *capsoides*, and with larger series of shells it may be possible to unite *T.* (*A.*) *pristis* Lam.[4] and *T.* (*A.*) *siamensis* von Martens[5] also with this species[6].

Distribution: — *T.* (*A.*) *capsoides* has a very wide range in the Indo-Pacific, and has also been recorded from the Red Sea.

The "Siboga" Expedition collected a single shell from the Anchorage off Dongala, Palos Bay, Celebes (St. 86).

14. *Tellina* (*Arcopagia*) *subelliptica* Sowerby.

1867. *Tellina subelliptica* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXXIX, figs. 220*a*, *b*.
1867. *Tellina subelliptica* Angas, Proc. Zool. Soc. London, p. 918.
1868. *Macoma subelliptica* Tryon, Amer. Journ. Conch., IV, p. 103.
1878. *Arcopagia subelliptica* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 323.
1890. *Macoma subelliptica* Paetel, Cat. Conch. Samm., III, p. 55.

I cannot understand why Tryon included *Tellina subelliptica* of Sowerby in the genus *Macoma* Leach. This species has the typical *Arcopagia*-type of sculpture and hinge, and does not suggest any relationship to species of the genus *Macoma*.

Distribution: — *T.* (*A.*) *subelliptica* was described from specimens dredged at Port Jackson, New South Wales, and has since been recorded from New Guinea and New Caledonia.

The "Siboga" Expedition collected typical shells in the Anchorage off Djangkar, Java (St. 4), Tual Anchorage, Kei Islands (St. 258) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

15. *Tellina* (*Arcopagia*) *casta* Hanley.

1844. *Tellina casta* Hanley, Proc. Zool. Soc. London, p. 63.
1845. *Tellina casta* Catlow & Reeve, Conch. Nomencl., p. 22.

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1) Deshayes, G. P. — Proc. Zool. Soc. London, (volume for 1854), p. 365 (1855).

2) Melvill, J. C. — Proc. Malacol. Soc. London, pt. II, p. 116, pl. VIII, fig. 9 (1896).

3) Bertin, V. — Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 250, pl. VIII, figs. 6, *a*, *b* (1878).

4) Lamarck, J. B. — Anim. sans Vertèb., V, p. 531 (1818).

5) Von Martens, E. — Proc. Zool. Soc. London, p. 18 (1860).

6) According to Lamy, E. — Bull. Mus. d'Hist. Nat. Paris, XXIV, p. 29 (1918), Jousseaume proposed to separate *T.* (*A.*) *pristis*, *T.* (*A.*) *capsoides* and other allied species under the generic name *Pristis*, but this is hardly necessary in view of these species being typical *Arcopagia*.

1846. *Tellina casta* Hanley in Sowerby, Thes. Conch., I, p. 253, pl. LVI. fig. 9.
1856. *Tellina* (*Arcopagia*) *casta* Adams, H. & A., Gen. Rec. Moll., p. 396.
1860. *Tellina casta* Reeve, Elem. Conch., II, p. 125.
1868. *Tellina casta* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XLVI, fig. 269.
1868. *Tellina* (*Arcopagia*) *casta* Tryon, Amer. Journ. Conch., IV, p. 89.
1871. *Tellina* (*Arcopagia*) *casta* Römer, in Martini-Chemn. Conch.-Cab. (N. F.), X (4), *Tellina*, p. 95.
1874. *Tellina* (*Arcopagia*) *casta* Dunker, Cat. Mus. Godeffroy, V, p. 166.
1878. *Arcopagia casta* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2), I, p. 323.
1885. *Tellina* (?) *casta* Smith, "Challenger" Lamellibranchia., p. 109.
1887. *Tellina* (*Arcopagia* ?) *casta* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 215.
1890. *Tellina* (*Arcopagia*) *casta* Paetel, Cat. Conch. Samm., III, p. 44.
1909. *Tellina* (*Arcopagia* ?) *casta* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 193.

All the shells of *T.* (*A.*) *casta* collected by the "Siboga" Expedition are of a white colour. The left valve is more convex than the right and the sculpture consists of very fine concentric rugae. The largest specimen is 15 mm. long × 13 mm. high.

Distribution: — *T.* (*A.*) *casta* has been recorded from the Mergui Archipelago in the west to Torres Strait in the Australian waters.

The "Siboga" Expedition collected a large number of odd valves at Sailus Ketjil, Paternoster Islands (St. 37), Bay of Bima (St. 47), Madura Bay (St. 51), Bay of Nangamessi, Sumba (St. 53), Macassar (St. 71), west of Kwandang Bay entrance (St. 116) and Anchorage off Lirung, Salibabu Island (St. 133).

16. *Tellina* (? *Arcopagia*) *fabrefacta* Pilsbry. (Plate V, fig. 36).

1904. *Tellina fabrefacta* Pilsbry, Proc. Acad. Nat. Sci. Philadelphia, p. 555, pl. XLI, figs. 11, 12.
1906. *Tellina fabrefacta* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, pp. 466, 478.
1909. *Tellina fabrefacta* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 189.
1910. *Arcopagia fabrefacta* Hedley, Austral. Ass. Adv. Sci., XII, p. 350.

A single valve, which I assign to *T.* (? *A.*) *fabrefacta* agrees with Pilsbry's description and figures of this species. I have also compared it with shells of this species from Queensland in the British Museum (Nat. Hist.), London, and can find no difference between them. I figure this valve.

I am not quite definite about the subgeneric position of this species, but it appears to belong to the subgenus *Arcopagia*.

Distribution: — *T.* (*A.*) *fabrefacta* has been recorded from Japan; Queensland, Australia; Singapore and the Gulf of Siam.

A single valve of this species was collected by the "Siboga" Expedition at Macassar.

17. *Tellina* (*Pseudarcopagia*) *costata* Sowerby.

1867. *Tellina costata* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXXIV, fig. 194.
1868. *Tellina* (*Arcopagia*) *costata* Tryon, Amer. Journ. Conch. IV, p. 89.
1878. *Arcopagia costata* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 322.
1885. *Tellina* (*Arcopagia*) *pretiosa* Smith (ex parte), "Challenger" Lamellibranchia., p. 104.
1890. *Tellina costata* Paetel, Cat. Conch. Samm., III, p. 44.
1896. *Tellina* (*Tellinella*) *costata* Casto de Elera, Cat. Sist. Filip., p. 726.

1903. *Arcopagia costata* Hidalgo, Obras Malacol., II, p. 153.
1905. *Arcopagia costata* Hidalgo, Cat. Filip., p. 319.
1928. *Tellina* (*Linearia*) *costata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 92.

It is not possible to agree with SMITH's remarks that "there is no likelihood of this charming species being confounded with any other", as he himself confused two quite distinct species *T.* (*P.*) *costata* and *T.* (*P.*) *pretiosa*. In *T.* (*P.*) *costata* there are over forty low, radial ribs separated by narrow interstices, often with still weaker ribs in the interstices, and distinctly crenulated by concentric ribs cutting the surface into squarish areas. On the posterior side from near the angle at the margin the ridges are very weak but equally developed. In *T.* (*P.*) *pretiosa*, on the other hand, the beautiful "squamate costellae" are separated by very deep interstices, and the concentric ribbing is very feebly marked. SOWERBY's figures of the two species illustrate this point quite clearly.

Tellina (*Arcopagia*) *habrotima* Melvill [1]) from the Angrias Bank, Arabian Sea is, as I have satisfied myself from an examination of the type of the species, based on a full grown shell of *T.* (*P.*) *costata*.

Distribution: — *T.* (*P.*) *costata* has so far been recorded from the Philippines and the Arabian Sea.

The "Siboga" Expedition collected shells of this species at Macassar (St. 71) and Anchorage off Beo, Karakelang Islands (St. 131).

18. *Tellina* (*Pseudarcopagia*) *pretiosa* Deshayes.

1854. *Tellina pretiosa* Deshayes, Proc. Zool. Soc. London, p. 360.
1856. *Tellina* (*Arcopagia*) *pretiosa* Adams, H. & A., Gen. Rec. Moll., II, p. 397.
1868. *Tellina* (*Arcopagia*) *pretiosa* Tryon, Amer. Journ. Conch., IV, p. 91.
1869. *Tellina pretiosa* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. LVI, fig. 329.
1878. *Arcopagia pretiosa* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 325.
1885. *Tellina* (*Arcopagia*) *pretiosa* Smith (ex parte), "Challenger" Lamellibranchia, p. 104.
1890. *Tellina* (*Arcopagia*) *pretiosa* Paetel, Cat. Conch. Samm., III, p. 49.
1896. *Tellina* (*Arcopagia*) *pretiosa* Casto de Elera, Cat. Sist. Filip., p. 725.
1903. *Arcopagia pretiosa* Hidalgo, Obras Malacol., II, p. 153.
1905. *Arcopagia pretiosa* Hidalgo, Cat. Filip., p. 320.
1928. *Tellina* (*Linearia*) *pretiosa* Faustino, Summary Philippine Mar. Freshw. Moll., p. 93.

I have discussed the differences between *T.* (*P.*) *pretiosa* and *T.* (*P.*) *costata* in my remarks on the latter species. The shell of *T.* (*P.*) *pretiosa* in the young stages resembles that of *T.* (*P.*) *costata*, but the sculpture enables one to separate the two species without any difficulty.

Distribution: — *T.* (*P.*) *pretiosa* is found in the Philippines and round Fiji.

The "Siboga" Expedition collected shells of this species at the Anchorage off Djangkar, Java (St. 4), Bay of Pidjot, Lombok (St. 33), Kambaragi Bay, Tana Djampeah (St. 64), west of Kwandang Bay entrance (St. 116), Anchorage off Lirung, Salibabu Island (St. 133), Anchorage off Laiwui, coast of Obi Major (St. 142), between the Islands of Wowoni and Buton, northern entrance of Buton Strait (St. 204), Anchorage south of Lucipara Group (St. 225) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

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1) MELVILL, J. C. — Mem. Proc. Manchester Lit. Phil. Soc., XLII, N⁰ 4, p. 34, pl. q, fig. 8 (1898).

19. *Tellina (Pseudarcopagia) carnicolor* Hanley.

1844. *Tellina incarnata* Hanley (non Linn.), Proc. Zool. Soc. London, p. 68.
1846. *Tellina carnicolor* Hanley in Sowerby, Thes. Conch., I, p. 263, pl. LVI, fig. 15.
1855. *Tellina Strangei* Deshayes, Proc. Zool. Soc. London (volume for 1854), p. 362.
1856. *Tellina (Arcopagia) carnicolor* Adams, H. & A., Gen. Rec. Moll., II, p. 397.
1860. *Tellina carnicolor* Reeve, Elem. Conch., II, p. 125.
1867. *Tellina carnicolor* and *T. corbis* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXIV. figs. 126, 127.
1868. *Tellina (Arcopagia) carnicolor* and *T. (A.) corbis* Tryon, Amer. Journ. Conch., IV, p. 89.
1871. *Tellina (Arcopagia) carnicolor* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (4), *Tellina*, p. 85.
1882. *Tellina corbis* and *Arcopagia carnicolor* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, pp. 288, 322.
1884. *Tellina carnicolor* Grasset, Ind. Test. Viv., p. 254.
1890. *Tellina (Arcopagia) carnicolor*, *T. (A.) corbis* and *T. (A.) Strangei* Paetel, Cat. Conch. Samm., III, pp. 44, 51.
1896. *Tellina (Arcopagia) carnicolor* Casto de Elera, Cat. Sist. Filip., p. 724.
1898. *Tellina (Arcopagia) carnicolor* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 47.
1903. *Tellina carnicolor* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 627.
1903. *Arcopagia carnicolor* Hidalgo, Obras Malacol., II, p. 154.
1905. *Arcopagia carnicolor* Hidalgo, Cat. Filip., p. 319.
1909. *Arcopagia carnicolor* Hedley, Austral. Ass. Adv. Sci., XII, p. 350.
1909. *Tellina (Arcopagia) carnicolor* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 190.
1910. *Arcopagia carnicolor* Hedley, Proc. Linn. Soc. N. S. Wales, XXXIV, p. 433.
1928. *Tellina (Linearia) carnicolor* Faustino, Summary Philippine Mar. Freshw. Moll., p. 92.

Smith was right in combining *T. strangei* Deshayes and *T. corbis* Sowerby with *T. (P.) carnicolor*. This species appears to be allied to *T. (P.) costata* Sowerby and *T. (P.) pretiosa*, as it has the same type of shell sculpture; its hinge is of the normal *Pseudarcopagia*.

Distribution: — *T. (P.) carnicolor* has been recorded from the Maldives in the Indian Ocean to the Philippines, New Caledonia and New Zealand in the Pacific.

The "Siboga" Expedition collected a few shells of this species in the Bay of Pidjot, Lombok (St. 33), Bay of Bima (St. 47) and Kambaragi Bay, Tanah Djampeah (St. 64).

20. *Tellina (Phylloda) foliacea* Linn.

1741. *Folium* Rumph, Amboin. Rarit., p. 148, pl. XLV, fig. K.
1742. *Tellina arausiana* d'Argenville, Hist. Nat., pp. 328, 330, pl. XXV, fig. E.
1753. *Tellina muricata, Folium* Klein, Tent. Méth. Ost., p. 162, pl. XI, fig. 64.
1756. *Tellina Folium* Lesser, Test. Theol., p. 451, fig. CXXI.
1758. *Tellina foliacea* Linnaeus, Syst. Nat., (ed. X), p. 675.
1764. *Tellina foliacea* Linnaeus, Mus. Lud. Ulr., p. 479.
1767. *Tellina foliacea* Linnaeus, Syst. Nat., (ed. XII), p. 1117.
1771. *Langue d'or* Knorr, Délices Yeux, V, p. 47, pl. XXIX, fig. 2.
1780. *Moule* Favanne, La Conch., pl. XLIX, fig. S 2.
1782. *Tellina foliacea Linnaei* Chemnitz, Conch.-Cab., VI, p. 103, pl. X, fig. 95.
1784. *Tellina cinnamar* Martyn, Universal Conch., IV, pl. CLVI (left figure).
1788. *Tellina foliacea* Barbut, Gen. Verm., p. 24, pl. III, fig. 2.
1788. *Tellina foliacea* Schröter, Conch.-Cab. Namen Reg., p. 103.
1790. *Tellina foliacea* Gmelin, Syst. Nat., (ed. XIII), p. 3232.
1797. Bruguière, Encycloped. Méthod., pl. CCLXXXVII, p. 4.
1797. *Tellina cristata* Humphrey, Mus. Calonnianum, p. 46.

1798. *Tellina foliacea* Röding, Mus. Boltenianum, p. 186.
1802. *Tellina foliacea* Bosc, Hist. Nat. Coq., III, p. 22, pl. XVIII, fig. 2.
1817. *Phylloda aurea* Schumacher, Ess. Nouv. Syst., p. 149, pl. XVI, figs. 1*a*, *b*.
1817. *Tellina foliacea* Dillwyn, Descr. Cat., I, p. 80.
1818. *Tellina foliacea* Lamarck, Anim. sans Vertèb., V, p. 523.
1824. *Tellina foliacea* Dubois, Epitome, p. 57.
1825. *Tellina foliacea* Sowerby, Cat. Tankerville, p. 9.
1825. *Tellina foliacea* Wood, Ind. Test., p. 18, pl. III, fig. 20.
1828. *Tellina foliacea* Blainville, Dict. Sci. Nat., LII, p. 533.
1832. *Tellina foliacea* Deshayes, Encyclopéd. Méthod., III, p. 1010.
1835. *Tellina foliacea* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 192.
1843. *Tellina Foliacea* Hanley, Rec. Biv. Shells, p. 62.
1844. *Tellina foliacea* Potiez & Michaud, Gal. Douai, II, p. 213.
1845. *Tellina foliacea* Catlow & Reeve, Conch. Nomencl., p. 23.
1846. *Tellina foliacea* Hanley in Sowerby, Thes. Conch., I, p. 274, pl. LXV, fig. 253.
1847. *Phylloda foliacea* Gray, Proc. Zool. Soc. London, p. 186.
1853. *Phylloda foliaceum* Mörch, Cat. Yoldi, II, p. 11.
1855. *Tellina foliacea* Hanley, Ipsa Linn. Conch., p. 36.
1855. *Tellina foliacea* Berge, Conchylienbuch, p. 44.
1856. *Tellina foliacea* Hanley in Wood, Ind. Test., p. 22, pl. III, fig. 20.
1856. *Tellina* (*Phylloda*) *foliacea* Adams, H. & A., Gen. Rec. Moll., p. 397.
1860. *Tellina foliacea* Reeve, Elem. Conch., p. 125, pl. XXXVIII, fig. 208.
1862. *Tellina* (*Phylloda*) *foliacea* Chenu, Man. Conchyliol., II, p. 68, fig. 289.
1866. *Tellina foliacea* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. III, fig. 11.
1867. *Tellina foliacea* Mitchell, Cat. Mus. Madras, p. 62.
1868. *Tellina* (*Phylloda*) *foliacea* Tryon, Amer. Journ. Conch., IV, p. 91.
1869. *Phylloda foliacea* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 880.
1872. *Tellina* (*Phylloda*) *foliacea* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X, (4), *Tellina*, p. 162, pl. XXXIV, fig. 1—3.
1874. *Tellina* (*Peronaea*) *foliacea* Dunker, Cat. Mus. Godeffroy, V, p. 167.
1878. *Tellina* (*Phylloda*) *foliacea* Kobelt, Illustr. Conchylienbuch, p. 329, pl. XCV, fig. 15.
1880. *Tellina* (*Phylloda*) *foliacea* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 330.
1881. *Phylloda foliacea* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 8.
1884. *Tellina foliacea* Grasset, Ind. Test. Viv., p. 254.
1884. *Tellina* (*Phylloda*) *foliacea* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 991.
1884. *Tellina* (*Phylloda*) *foliacea* Tryon, Struct. Syst. Conch., III, p. 169.
1887. *Tellina* (*Phylloda*) *foliacea* Fischer, P., Man. Conchyliol., p. 1148.
1890. *Tellina* (*Phylloda*) *foliacea* Paetel, Cat. Conch. Samm., III, p. 46.
1891. *Tellina foliacea* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 245.
1896. *Tellina* (*Philloda*, sic) *foliacea* Casto de Elera, Cat. Sist. Filip., p. 728.
1900. *Tellina* (*Phylloda*) *foliacea* Dall, Proc. U. S. Nat. Mus., XXIII, p. 291.
1902. *Tellina foliacea* Shopland, Proc. Malacol. Soc. London, V, p. 177.
1903. *Phylloda foliacea* Hidalgo, Obras Malacol., II, p. 156.
1905. *Phylloda foliacea* Hidalgo, Cat. Filip., p. 320.
1909. *Tellina* (*Phylloda*) *foliacea* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 469.
1910. *Phylloda foliacea* Hedley, Austral. Ass. Adv. Sci., XII, p. 350.
1918. *Tellina* (*Phylloda*) *foliacea* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIV, p. 32.
1929. *Tellina* (*Phylloda*) *foliacea* Faustino, Summary Philippine Mar. Freshw. Moll., p. 94.

The adult shell of *T.* (*P.*) *foliacea* is well figured and described by SOWERBY, while some of the younger stages are figured by RÖMER. The only points to which attention may be directed is that the spinulation of the post-dorsal margin is equally marked in both young and adult shells, and that there are, in the adult shell, over a dozen well marked, low, radial ridges with short spines on the posterior wing behind the oblique rib.

Distribution: — *T.* (*P*) *foliacea* has a very wide range in the Indo-Pacific.

The "Siboga" Expedition collected only two very young shells at the Anchorage off Seba, Savu (St. 58).

21. *Tellina* (*Angulus*) *rhomboides* Quoy & Gaimard.

1833—35. *Tellina rhomboides* Quoy & Gaimard, Voy. "Astrolabe", III, p. 502, pl. LXXXI, figs. 4—7 (as of *Tellina losangee*).
1835. *Tellina clathrata* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 208.
1842. *Tellina Clathrata* Hanley, Rec. Biv. Shells, p. 65.
1845. *Tellina clathrata* Catlow & Reeve, Conch. Nomencl., p. 22.
1846. *Tellina lauta* and *T. compta* Gould, Expl. Shells, p. 79.
1846. *Tellina Rhomboides* Hanley in Sowerby, Thes. Conch., I, p. 304, pl. LVIII, figs. 92, 96, 97.
1848. *Tellina rhomboides* Chenu, Illustr. Conchyliol., *Tellina*, pl. V, figs. 9, 9*a*.
1852. *Tellina lauta* and *T. compta* Gould, U. S. Expl. Exped., p. 406, pl. XXXV, figs. 515*a*, *b*, p. 408, pl. XXXV, figs. 514*a*, *b*.
1855. *Tellina silicula* Deshayes, Proc. Zool. Soc. London (volume for 1854), p. 363.
1856. *Tellina Clathrata* Hanley, Rec. Biv. Shells, Appendix, p. 9, pl. XIV, fig. 12.
1856. *Tellina* (*Moera*) *rhomboides* and *T.* (*M.*) *silicula* Adams, H. & A., Gen. Rec. Moll., II, p. 396.
1856. *Tellina* (*Angulus*) *compta* and *T.* (*A.*) *lauta* Adams, H. & A., op. cit., p. 397.
1860. *Tellina rhomboides* Reeve, Elem. Conch., II, p. 126.
1862. *Tellina compta* and *T. lauta* Gould, Otia Conch., p. 79.
1867—68. *Tellina rhomboides*, *T. caseus*, *T. texturata*, *T. reticulata* and *T. silicula* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXII, figs. 114, 115; pl. XLI, fig. 233; pl. XLV, fig. 233*b*; pl. XLIII, fig. 252; pl. XLVIII, figs. 278*a*—*c*.
1868. *Tellina* (*Moera*) *rhomboides* Tryon, Amer. Journ. Conch., IV, p. 88.
1870. *Tellina* (*Peronaea*) *pura* and *T.* (*P.*) *erythraensis* Adams, H., Proc. Zool. Soc. London, p. 789, pl. XLVIII, fig. 6; p. 790, pl. XLVIII, fig. 8.
1870. *Tellina* (*Peronaea*) *casea* and *T.* (*P.*) *pura* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 446.
1871. *Tellina rhomboides* Lischke, Japan. Meeresconch., II, p. 172.
1871. *Tellina* (*Angulus*) *rhomboides* and *T.* (*A.*) *subrosea* (non Hanley) Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (4), *Tellina*, p. 144, pl. XXXI, figs. 14—17; p. 150, pl. XXXII, figs. 14—16.
1873. *Tellina bifaria* Baird, Voy. "Curaçao", p. 451, pl. XLI, fig. 13.
1878. *Tellina* (*Peronaea*) *caseus*, *T.* (*Fabulina*) *rhomboides*, *T.* (*Homala*) *secunda* and *T.* (*Homala*) *texturata* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, pp. 271, 279, 301, 306.
1880. *Tellina* (*Angulus*) *rhomboides* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 330.
1882. *Tellina rhomboides* Dunker, Ind. Moll. Mar. Japan., p. 191.
1884. *Tellina rhomboidea* and *T. silicula* Grasset, Ind. Test. Viv., p. 256.
1885. *Tellina* (*Angulus*) *rhomboides* Smith, "Challenger" Lamellibranchia, p. 103.
1886. *Tellina rhomboides* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 106.
1896. *Tellina* (*Moera*) *rhomboides* Casto de Elera, Cat. Sist. Filip., p. 728.
1899. *Tellina* (*Donacilla*) *rhomboides* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 201.
1899. *Tellina rhomboides* Hedley, Mem. Austral. Mus., III, pp. 499, 529.
1901. *Tellina pura* and *T. caseus* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math. Nat., LXIX, p. 278.
1902. *Tellina caseus* Shopland, Proc. Malacol. Soc. London, V, p. 177.
1903. *Tellina rhomboides* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 627.
1903. *Tellina rhomboides* Hidalgo, Obras Malacol., II, p. 127.
1905. *Tellina rhomboides* Hidalgo, Cat. Filip., p. 316.
1906. *Tellina rhomboides* Owston, Japan. Loochooan Shells, p. 37.
1906. *Tellina* (*Moera*) *rhomboides* Melvill & Standen, Proc. Zool. Soc. London, p. 820.

1906. *Tellina* (*Angulus*) *rhomboides* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 208.
1909. *Tellina* (*Angulus?*) *rhomboides* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 203.
1910. *Tellina rhomboides* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1911. *Tellina* (*Angulus*) *rhomboides* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 133.
1917. *Tellina rhomboides* Odhner, Kungl. Sv. Akad. Handl., LII, N⁰. 16, p. 26.
1918. *Tellina* (*Exotica*) *rhomboides* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIV, p. 116.
1919. *Tellina rhomboides* Odhner, Arkiv. Zool., XII, N⁰. 6, p. 27.
1928. *Tellina* (*Tellina*) *rhomboides* Faustino, Summary, Philippine Mar. Freshw Moll., p. 89.
1929. *Tellina* (*Angulus*) *rhomboides* Dautzenberg, Faun. Colon. Francais., III, p. 632.

As the synonymy given above indicates, this variable species has been described under several distinct names by various authors. The hinge is very peculiar in that it resembles that of *Psammobia*, but there can be little doubt of its being a true *Tellina*. Lamy has adopted for *T. rhomboides* and other allied species Jousseaume's manuscript generic name *Exotica*, but his generic definition "il existe deux dents cardinales à chaque valve" does not apply to *T. rhomboides*; in this species there are two cardinals in the right and a single slightly grooved cardinal in the left valve. The generic name *Exotica* is superfluous as *T. rhomboides* can definitely be included in the subgenus *Angulus* Megerle.

Distribution: — *T.* (*A.*) *rhomboides* has a very wide range in the Indo-Pacific, and has been recorded from the Red Sea and the Persian Gulf.

In the "Siboga" Expedition it is represented by young shells collected at Sailus Ketjil, Paternoster Islands (St. 37), Macassar (St. 71), Sulu (St. 104) and Banda Anchorage (St. 240).

Remarks: — Iredale [1]) has recently suggested that as the name *Tellina rhomboides* is preoccupied, a substitute is necessary to replace it, and he proposed adopting Deshayes' name *T. clathrata* which was introduced for the same figures of Quoy & Gaimard's work. He further adds that as Deshayes' name was published previous to the publication of the letterpress of Quoy & Gaimard, there can be no question of priority. I have searched in vain for the work in which the name *Tellina rhomboides* was introduced prior to Quoy & Gaimard, and with Mr. C. D. Sherborn I have looked into the dates of publication of Quoy & Gaimard's letterpress of the Mollusca part of "Astrolabe" and Deshayes' edition of "Lamarck Anim. sans Vertèb.", vol. VI, and find that the former was certainly published before the latter. Deshayes' volume was published in March 1835, while Quoy & Gaimard's work was issued in parts, and the part in which the description of *Tellina rhomboides* appeared, was certainly issued before this date.

22. *Tellina* (*Angulus*) *nitidula* Dunker.

1860. *Tellina nitidula* Dunker, Malakozool. Blätt., VI, p. 236.
1861. *Tellina nitidula* Dunker, Moll. Japon., p. 27, pl. III, fig. 14.
1869. *Tellina nitidula* Lischke, Japan. Meeresconch., I, p. 129.
1871. *Tellina nitidula* Lischke, Japan. Meeresconch., II, 113.
1871. *Tellina* (*Angulus*) *nitidula* Römer in Martini-Chemn. Conch.-Cab. (N.F.), X (2), *Tellina*, p. 161.
1878. *Tellina* (*Homala*) *nitidula* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 298.
1882. *Tellina nitidula* Dunker, Ind. Moll. Mar. Japon., p. 191.
1890. *Tellina* (*Tellinella*) *nitidula* Paetel, Cat. Conch. Samm., p. 48.
1906. *Tellina nitidula* Owston, Japan. Loochooan Shells, p. 37.

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[1]) Iredale, T. — Mem. Queensland Mus., IX, p. 266 (1929).

The specimens, which I refer to DUNKER's species *T.* (*A.*) *nitidula* agree with DUNKER's description and figures. The shells are of a small size and thin; the anterior part is longer than the posterior, and the sculpture consists of very fine, regular concentric rugae. The hinge is of the normal *Angulus*-type. The colour varies from shining white to pink or even rose red.

Distribution: — *T.* (*A.*) *nitidula* was described from the Japanese waters.

The "Siboga" Expedition collected shells of this species from west of Kwandang Bay entrance (St. 116), Anchorage off Lirung, Salibabu Island (St. 133), between the Islands of Wowoni and Buton, entrance of Buton Strait (St. 204) and Rumah-Kuda Bay, Roma Island (St. 279).

23. *Tellina* (*Angulus*) *rhodon* Hanley. (Plate V, figs. 37, 38).

1844. *Tellina Rhodon* Hanley, Proc. Zool. Soc. London, p. 140.
1846. *Tellina Rhodon* Hanley in Sowerby, Thes. Conch., I, p. 297, pl. LVIII, fig. 93.
1856. *Tellina* (*Angulus*) *rhodon* Adams, H. & A., Gen. Rec. Moll., II, p. 397.
1860. *Tellina rhodon* Reeve, Elem. Conch., II, p. 126.
1868. *Tellina* (*Angulus*) *rhodon* Tryon, Amer. Journ. Conch., IV, p. 94.
1871. *Tellina* (*Angulus*) *rhodon* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (4), *Tellina*, p. 159.
1878. *Tellina* (*Homala*) *rhodon* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 302.
1890. *Tellina* (*Tellinella*) *rhodon* Paetel, Cat. Conch. Samm., III, p. 50.
1903. *Tellina Rhodon* Hidalgo, Obras Malacol., II, p. 135.
1905. *Tellina Rhodon* Hidalgo, Cat. Filip., p. 316.
1928. *Tellina* (*Tellinella*) *rhodon* Faustino, Summary Philippine Mar. Freshw. Moll., p. 89.

A right and a left valve, which I refer to *T.* (*A.*) *rhodon*, agree with HANLEY's description and figures of the species. I figure the two valves.

Distribution: — *T.* (*A.*) *rhodon* was described from shells of unknown habitat, but HIDALGO and FAUSTINO have included this species in the Philippine List.

The "Siboga" Expedition collected two stray valves from the Anchorage off Djangkar, Java (St. 4) and Ruma-Kuda Bay, Roma Island (St. 279).

24. *Tellina* (*Peronidia*) *assimilis* Hanley.

1844. *Tellina assimilis* Hanley, Proc. Zool. Soc. London, p. 144.
1846. *Tellina assimilis* Hanley in Sowerby, Thes. Conch., I, p. 302, pl. LVIII, fig. 95.
1856. *Tellina* (*Tellinella*) *assimilis* Adams, H. & A., Gen. Rec. Moll., II, p. 395.
1860. *Tellina assimilis* Reeve, Elem. Conch., II, p. 125.
1867. *Tellina assimilis* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXXIV, fig. 191.
1868. *Macoma* (*Peronaea*) *assimilis* Tryon, Amer. Journ. Conch., IV, p. 97.
1873. *Tellina* (*Macoma*) *assimilis* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (4), *Tellina*, p. 263.
1878. *Tellina* (*Homala*) *assimilis* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 286.
1890. *Macoma assimilis* Paetel, Cat. Conch. Samm., III, p. 53.
1896. *Tellina* (*Macoma*) *assimilis* Casto de Elera, Cat. Sist. Filip., p. 731.
1903. *Tellina assimilis* Hidalgo, Obras Malacol., II, p. 135.
1905. *Tellina assimilis* Hidalgo, Cat. Filip., p. 313.
1928. *Tellina* (*Tellina*) *assimilis* Faustino, Summary Philippine Mar. Freshw. Moll., p. 84.

The fairly large series of shells of all ages collected by the "Siboga" Expedition agree with HANLEY's types of *T. assimilis* in all respects. *T. assimilis* appears to be closely allied to *T.* (*P.*) *truncatula* Sowerby, and I have, therefore, referred it to the subgenus *Peronidia* Dall.

Distribution: — *T.* (*P.*) *assimilis* was hitherto known from the Philippines.

The "Siboga" Expedition collected specimens of this species in the Bay of Labuan Tring, west coast of Lombok (St. 19), Macassar (St. 71), Anchorage off Laiwui, coast of Obi Major (St. 142), Anchorage off Atjatuning, west coast of New Guinea (St. 169), Waru Bay, north coast of Ceram (St. 174), Sanana Bay, east coast of Sula Besi (St. 193), Tual Anchorage, Kei Islands (St. 258) and Sapeh Bay, east coast of Sumbawa (St. 311).

25. *Tellina* (*Peronidia*) *truncatula* Sowerby.

1825. *Tellinides truncatulus* Sowerby, Cat. Tankerville, p. 10, Appendix, p. III.
1845. *Tellina truncatula* Catlow & Reeve, Conch. Nomencl., p. 25.
1846. *Tellina* (*Tellinides*) *truncatula* Hanley in Sowerby, Thes. Conch., I, p. 290, pl. LVII, fig. 69.
1846. *Tellinides Truncatulus* Hanley, Rec. Biv. Shells, p. 73, pl. XIII, fig. 54.
1856. *Tellina* (*Tellinides*) *truncatula* Adams, H. & A., Gen. Rec. Moll., II, p. 398.
1860. *Tellina truncatula* Reeve, Elem. Conch., II, p. 126.
1867. *Tellina truncatula* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXXVII, fig. 212.
1868. *Tellina* (*Tellinides*) *truncatula* Conrad, Amer. Journ. Conch., IV, p. 96.
1872. *Tellina* (*Tellinides*) *truncatula* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (4), *Tellina*, p. 178.
1878. *Tellina* (*Homala*) *truncatula* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2), I, p. 307.
1890. *Tellina* (*Tellinides*) *truncatula* Paetel, Cat. Conch. Samm., III, p. 52.
1896. *Tellina* (*Tellinides*) *truncatella* (sic), Casto de Elera, Cat. Sist. Filip., p. 727.
1908. *Tellina incisa* Preston, Rec. Ind. Mus., II, p. 209, pl. XVII, fig. 59.
1928. *Tellina* (*Tellina*) *truncatula* Faustino, Summary Philippine Mar. Freshw. Moll., p. 91.

I refer this species to Dall's section *Peronidia*, which I consider to be of the same rank as *Arcopagia*, *Angulus*, *Tellina s. s.*, etc.

Preston's species *Tellina incisa* is certainly a synonym of *T.* (*P.*) *truncatula*.

Distribution: — *T.* (*P.*) *truncatula* was described from the Philippines.

The "Siboga" Expedition collected shells in the Anchorage off Djangkar, Java (St. 4) and Waru Bay, north coast of Ceram (St. 174).

26. *Tellina* (*Peronidia*) *micans* Hanley.

1844. *Tellina micans* Hanley, Proc. Zool. Soc. London, p. 72.
1845. *Tellina micans* Catlow & Reeve, Conch. Nomencl., p. 24.
1846. *Tellina micans* Hanley in Sowerby, Thes. Conch., I, p. 309, pl. LIX, fig. 106.
1856. *Tellina* (*Peronaea*) *micans* Adams, H. & A., Gen. Rec. Moll., II, p. 399.
1860. *Tellina micans* Reeve, Elem. Conch., II, p. 126.
1865. *Tellina depauperata* von Martens, Ann. Mag. Nat. Hist., (3) XVI, p. 429.
1867. *Tellina micans* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXIV, fig. 130.
1868. *Tellina* (*Peronaea*) *micans* Tryon, Amer. Journ. Conch., IV, p. 97.
1871. *Tellina* (*Peronaea*) *micans* Römer, in Martini-Chemn. Conch.-Cab. (N. F.), X (4), *Tellina*, p. 120, pl. XXVIII, figs. 5—7.
1872. *Tellina* (*Macoma*) *depauperata* Römer, loc. cit. p. 254, pl. XLIV, figs. 1—3.
1878. *Tellina* (*Homala*) *micans* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 297.
1884. *Tellina micans* Grasset, Ind. Test. Viv., p. 255.
1890. *Tellina* (*Peronaea*) *micans* Paetel, Cat. Conch. Samm., III, p. 48.
1896. *Tellina* (*Tellinella*) *micans* Casto de Elera, Cat. Sist. Filip., p. 730.
1902. *Tellina micans* Shopland, Proc. Malacol. Soc. London, V, 177.
1903. *Tellina micans* Hidalgo, Obras Malacol., II, p. 133.

1905. *Tellina micans* Hidalgo, Cat. Filip., p. 315.
1906. *Tellina* (*Peronaea*) *micans* Melvill & Standen, Proc. Zool. Soc. London, p. 828.
1906. *Psammobia micans* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 260.
1909. *Tellina* (*Peronaea*) *micans* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 204.
1928. *Tellina* (*Tellina*) *micans* Faustino, Summary Philippine Mar. Freshw. Moll., p. 87.

A large series of shells collected by the "Siboga" Expedition at various stations agree in all respects with the types of *T. micans* Hanley in the British Museum (Nat. Hist.), London. The largest shell in the "Siboga" collection is much larger (32 mm. as compared to 22 mm. in length), and is much thicker, more opaque and more rostrate.

Distribution: — *T.* (*P.*) *micans* was described from the Philippines, but has since been recorded from Aden, Persian Gulf and the Gulf of Siam.

The "Siboga" Expedition collected shells of this species in the Bay of Labuan Tring, west coast of Lombok (St. 19), Waru Bay, north coast of Ceram (St. 174), Saleyer Anchorage (St. 213) and Sapeh Bay, east coast of Sumbawa (St. 311).

27. *Tellina* (*Peronidia*) *cygnus* Hanley.

1844. *Tellina Cygnus* Hanley, Proc. Zool. Soc. London, p. 144.
1846. *Tellina cygnus* Hanley in Sowerby, Thes. Conch., I, p. 310, pl. LIX, fig. 122.
1856. *Tellina* (*Peronaea*) *cygnus* Adams, H. & A., Gen. Rec. Moll., II, p. 398.
1860. *Tellina cygnus* Reeve, Elem. Conch., II, p. 125.
1867. *Tellina cygnus* Sowerby in Reeve, Conch. Icon., XVII, *Tellina*, pl. XXIX, fig. 157.
1868. *Tellina aequistriata* and *T. producta* Sowerby, op. cit., pl. XLV, fig. 265, pl. XLVI, fig. 267.
1868. *Tellina* (*Peronaea*) *cygnus* Tryon, Amer. Journ. Conch., IV, p. 97.
1871. *Tellina* (*Peronaea*) *cygnus* Römer, in Martini-Chemn. Conch.-Cab. (N. F.), X (4), *Tellina*, p. 124.
1878. *Tellina* (*Peronaea*) *cygnus* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 271.
1890. *Tellina* (*Peronaea*) *cygnus* Paetel, Cat. Conch. Samm., III, p. 45.
1896. *Tellina* (*Tellinella*) *Cygneus* (sic), Casto de Elera, Cat. Sist. Filip., p. 734.
1903. *Tellina* (*Peronaea*) *cygnus* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 294.
1903. *Tellina Cygnus* Hidalgo, Obras Malacol., II, p. 124.
1905. *Tellina Cygnus* Hidalgo, Cat. Filip., p. 314.
1909. *Tellina* (*Peronaea*) *cygnus* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 204.
1928. *Tellina* (*Tellina*) *cygnus* Faustino, Summary Philippine Mar. Freshw. Moll., p. 85.

After a careful comparison of the types of *T. cygnus*, *T. aequistriata* and *T. producta* I consider them all as based on slightly different shells of the same species. Hanley described the sculpture of the species as "concentrically substriated", but Sowerby in "Conch. Icon." described it as "smooth". His two new species *T. producta* from Hong-Kong and *T. aequistriata* based on a shell of unknown habitat have to be included in the synonymy of *T.* (*P.*) *cygnus*.

The ovate-oblong shells of *T.* (*P.*) *cygnus* are distinctly rostrate, and the surface is covered with very minute, very regular, concentric striae.

Distribution: — *T.* (*P.*) *cygnus* has been recorded from China, the Philippines, New Caledonia and the Gulf of Siam.

The "Siboga" Expedition collected a few shells at Macassar (St. 71).

28. *Tellina* (*Peronidia*) *macassariensis* sp. nov. (Plate V, figs. 39, 40).

This new species is closely allied to *T.* (*P.*) *cygnus* Hanley [1]), but the shell is more trigonal, less elongate, more tumid, less rostrate, but with the beak more oblique and downwardly directed; the posterior ridge is much better developed and the sculpture consists of very regular, close-set, almost microscopic striae.

Measurements of Holotype: — Length 12 mm., height 10 mm., diameter 5.5 mm.

Two shells of this interesting species were collected by the "Siboga" Expedition at Macassar (St. 71, 27—32 metres).

Genus **Macoma** Leach.

1819. *Macoma* Leach, Ross, Voy., Appendix II, p. LXII.
1878. *Macoma* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 333.
1900. *Macoma* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1044.
1900. *Macoma* Dall, Proc. U. S. Nat. Mus., XXIII, p. 292.
1928. *Macoma* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 176.

For good definitions of the genus reference may be made to the works of DALL and WOODRING cited above. The genotype of *Macoma* is *Macoma tenera* Leach (= *Tellina calcarea* Gmelin). The subgenus *Macoma s. s.*, is not represented in the "Siboga" collection, but there are representatives of the subgenus *Psammacoma* Dall [2]) — type *Macoma* (*Psammacoma*) *candida* (Lam.).

1. *Macoma* (*Psammacoma*) *fallax* Bertin.

1846. *Tellina candida* Hanley (nec Lam.) in Sowerby, Thes. Conch., I, p. 301, pl. LXII, fig. 195.
1878. *Macoma fallax* Bertin, Nouv. Arch. Mus. d'Hist. Nat. Paris, (2) I, p. 343, pl. VIII, figs. 4, 4*a*.
1909. *Tellina* (*Macoma*) *fallax* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 207.

The "Siboga" specimens, which I assign to *Macoma* (*Psammacoma*) *fallax* agree with BERTIN's descriptions and figures in all details. The largest specimen in the "Siboga" collection is a right valve 53 mm. long, 31 mm. high.

Distribution: — BERTIN does not indicate the locality of his specimens, but HANLEY's specimen referred to this species was from the China Seas. LYNGE has recorded specimens from the Gulf of Siam under this name.

In the "Siboga" collection there is a good series of specimens from Madura Strait (St. 1, 37 metres; St. 2, 56 metres), Macassar (St. 71) and Saleyer (St. 213).

2. *Macoma* (*Psammacoma*) *arafurensis* Smith.

1885. *Tellina* (*Macoma*) *arafurensis* Smith, "Challenger" Lamellibranchia, p. 98, pl. IV, figs. 6, 6*a*, *b*.

SMITH in describing *M.* (*P.*) *arafurensis* referred to its close relationship with the species from the west coast of Central America described by HANLEY under the name *Tellina*

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1) HANLEY, S. — in Sowerby, Thes. Conch., I, p. 310, pl. LIX, fig. 122 (1846).

2) DALL, W. H. — Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1045 (1900) and Proc. U. S. Nat. Mus., XXIII, p. 292 (1900).

gubernaculum. In the British Museum (Nat. Hist.), London there are five shells from Bombay which undoubtedly belong to this species. In the "Siboga" collection there is a single, partly damaged left valve, which I refer to this species.

Distribution: — *M.* (*P.*) *arafurensis* was described from the Arafura Sea, but as remarked above, it appears to be a widely distributed species.

In the "Siboga" collection the species is represented by a single left valve dredged at St. 99 (Anchorage north of Ubian, 16—23 metres).

Family SCROBICULARIIDAE.

Genus **Semele** Schumacher.

1817. *Semele* Schumacher, Essai Nouv. Syst., p. 165.
1818. *Amphidesma* (ex parte), Lamarck, Anim. sans Vertèb., V, p. 489.
1887. *Semele* Fischer, P., Man. Conchyliol., p. 1153.
1900. *Semele* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 985.
1914. *Semele* Lamy, Journ. Conchyliol., LXI, p. 314.

A detailed discussion and description of the genus *Semele* is to be found in LAMY's work cited above. The genotype is *Semele proficua* (Pulteney).

1. *Semele jukesii* (Reeve).

1853. *Amphidesma Jukesii* Reeve, Conch. Icon., VIII, *Amphidesma*, pl. II, fig. 7.
1854. *Semele Jukesi* Adams, A., Proc. Zool. Soc. London (vol. for 1853), p. 95.
1856. *Semele Jukesii* Adams, H. & A., Gen. Rec. Moll., II, p. 411.
1860. *Amphidesma Jukesii* Reeve, Elem. Conch., II, p. 135.
1863. *Semele Jukesii* Tryon, Amer. Journ. Conch., IV, p. 120.
1880. *Amphidesma Jukesi* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 328.
1890. *Amphidesma Jukesi* Paetel, Cat. Conch. Samm., III, p. 63.
1899. *Semele jukesi* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 201.
1903. *Semele Jukesi* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 627.
1903. *Semele Jukesi* Hidalgo, Obras Malacol., II, p. 69.
1905. *Semele Jukesi* Hidalgo, Cat. Filip., pp. 264, 304.
1910. *Semele Jukesii* Hedley, Austral. Ass. Adv. Sci., XII, p. 350.
1914. *Semele Jukesi* Lamy, Journ. Conchyliol., LXI, p. 341.
1928. *Semele jukesi* Faustino, Summary Philippine Mar. Freshw. Moll., p. 96.

The two valves, which I assign to this species, are young, and have not developed either the exact form or the heavy shell of this species. The hinge, sculpture and even the general form correspond to that of ADAM's species.

Distribution: — *S. jukesii* was originally described from the Torres Straits, Australia, but has since been recorded from the Philippines, Singapore, Laccadive and Maldive Archipelago and Mauritius.

The "Siboga" Expedition dredged two young valves in the Bay of Bima (St. 47).

2. *Semele exarata* (Adams & Reeve).

1848. *Amphidesma exarata* Adams, A. & Reeve, Zool. Voy. "Samarang", Moll., p. 81, pl. XXIV, fig. 9.

1853. *Amphidesma exarata* Reeve, Conch. Icon., VIII, *Amphidesma*, pl. I, fig. 1.
1856. *Amphidesma exarata* Adams, H. & A., Gen. Rec. Moll., II, p. 411.
1860. *Amphidesma exarata* Reeve, Elem. Conch., II, p. 138.
1863. *Amphidesma exarata* Tryon, Amer. Journ. Conch., IV, p. 120.
1890. *Amphidesma exarata* Paetel, Cat. Conch. Samm., III, p. 63.
1903. *Semele exarata* Hidalgo, Obras Malacol., II, p. 70.
1905. *Semele exarata* Hidalgo, Cat. Filip., p. 264.
1906. *Semele exarata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1910. *Semele exarata* Hedley, Austral. Ass. Adv. Sci., XII, p. 350.
1913. *Semele exarata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXVIII, p. 274, pl. XVII, figs. 34—37.
1914. *Semele exarata* Lamy, Journ. Conchyliol., LXI, p. 343.
1928. *Semele exarata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 96.

Semele exarata is easily distinguished by its oblong ovate and somewhat oblique shell and the sculpture consisting of concentric, thin ribs, somewhat recurved anteriorly and posteriorly.

Distribution: — *S. exarata* is known from the Australian waters and the Philippines.

The "Siboga" Expedition collected only dead shells of this species in the Bay of Pidjot, Lombok (St. 33), Anchorage near Seget, west entrance of Selee (Galewo) Strait (St. 163) and Sulu. A young shell from the Anchorage off Djangkar, Java (St. 4) is probably to be referred to this species.

Genus **Abra** Lamarck.

1818. *Abra* Lamarck, Anim. sans Vertèb., V, p. 492.
1843. *Syndosmya* Recluz, Rev. Zool. Soc., VI, pp. 292, 359.
1852. *Orixa* Leach, Moll. Great Britain, p. 280.
1856. *Iacra* Adams, H. & A., Gen. Rec. Moll., II, p. 409.
1887. *Syndesmya* and *Orixa* Fischer, P., Man. Conchyliol., pp. 1151, 1152.
1900. *Abra* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 995.
1913. *Syndesmya* Lamy, Journ. Conchyliol., LXI, p. 268.
1925. *Abra* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 179.

The genus *Abra* was adopted by LAMARCK from the manuscript name of LEACH [1]. The type of the genus is *Abra tenuis* (Montagu). The genus is usually divided into two subgenera *Abra*, *s. s.*, and *Iacra* A. Adams.

1. *Abra maxima* (Sowerby).

1894. *Syndcsmya maxima* Sowerby, Proc. Malacol. Soc. London, I, p. 40, pl. V, fig. 5.
1894. *Abra maxima* Smith, Ann. Mag. Nat. Hist., (6), XIV, p. 169, pl. V, figs. 5—6.
1895. *Abra maxima* Smith, Ann. Mag. Nat. Hist., (6) XVI, p. 10.
1897. *Abra maxima* Smith, Illustr. Zool. R. I. M. S. "Investigator", Moll., pl. III, figs. 7, 7*a*.

The shells collected by the "Siboga" Expedition agree in every respect with the type and other specimens of the species from the Bay of Bengal and the Gulf of Oman collected by R. I. M. S. "Investigator".

Distribution: — *Abra maxima* has been taken in the Bay of Bengal and the Gulf of Oman. It is probably widely distributed in the Indian Ocean.

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1) See GRAY, J. E. — Ann. Mag. Nat. Hist., (1) XX, p. 272 (1847).

The "Siboga" Expedition brought up specimens of this species in deepsea trawls at St. 18 (7° 28′.2 S., 115° 24′.6 E., 1018 metres), St. 45 (7° 24′ S., 118° 15′.2 E., 794 metres), St. 76 (4° 22′.1 S., 118° 16′.9 E., 2029 metres), St. 208 (5° 39′ S., 122° 12′ E., 1886 metres) and St. 300 (10° 48′.6 S., 123° 23′.1 E., 918 metres). A few young shells from St. 178 (2° 40′ S., 128° 37′.5 E., 835 metres) and St. 211 (5° 40′.7 S., 120° 45′.5 E., 1158 metres) also appear to belong to this species.

2. *Abra sibogai* sp. nov. (Plate VI, figs. 1, 2).

The following is a description of this new species: — Shell of medium size, thin polished, oblique, elongated ovate; very inequilateral, moderately inflated; beaks pointed, slightly elevated; lunule elongate, narrowly cordate; escutcheon narrower, more elongate; anterior dorsal margin greatly arched; posterior almost straight; ventral margin slightly arcuate; anterior end longer, rounded, posterior subtruncate or rounded; cardinal teeth two in each valve, the anterior in right valve much longer than posterior and more oblique; internal ligamental pit long and narrow, almost in line with posterior slope; sculpture consisting of very fine, microscopic concentric striae. Shell of a whitish colour.

Measurements of Holotype: — Length 13.4 mm., height 11.2 mm., diameter 5.3 mm.

Habitat: — The Holotype and a few odd valves were brought up in a deep-sea trawl at St. 45 (7° 24′ S., 118° 15′.2 E., 794 metres). Other specimens of the species were obtained at St. 52 (9° 3′.4 S., 119° 56′.7 E., 959 metres), and at St. 300 (10° 48′.6 S., 123° 23′.1 E., 918 metres).

3. *Abra inanis* sp. nov. (Plate IX, figs. 13, 14).

The following is a description of this new species: — Shell of small size, thin, transluscent, polished, trigonal-ovate, inequilateral, moderately inflated; beaks pointed, hardly elevated; lunule very narrow, elongate; escutcheon more concave, elongated; bounded by a distinct ridge running almost to posterio-ventral margin of shell; both anterior and posterior dorsal margins greatly arched; ventral margin very arcuate; anterior end broadly rounded, posterior subacuminate; cardinal teeth two in each valve, subequal; internal ligamental pit long and narrow, almost parallel to posterior margin of shell; sculpture consisting of low but distinct concentric striae, better developed near the ventral margin. Shell of a whitish colour.

Measurements of right valve: — Length 20 mm., height 9 mm., diameter 2.4 mm.

Habitat: — Two odd valves, a right and a left one, were dredged at St. 159 (0° 59′.1 S., 129° 48′.8 E., 411 metres).

Remarks: — *A. inanis* resembles *A. cistula* (Melvill)[1]) from the Persian Gulf, but the shell of the "Siboga" species is more trigonal, more inflated, while there is no ridge on the posterior slope in *A. cistula*.

4. *Abra weberi* sp. nov. (Plate IX, figs. 15, 16).

This new species is closely allied to *A. maxima* (Sowerby) and *A. convexior* Smith[2]), but is distinguished from either by its shell being not so elongate, comparatively much higher,

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1) Melvill, J. C. — in Melvill, J. C. & Standen, R., Proc. Zool. Soc. London, p. 825, pl. LVI, fig. 6 (1907).

2) Smith, E. A. — Ann. Mag. Nat. Hist., (6) XVI, p. 10, pl. II, figs. 4, 4*a* (1895).

more oblique and more inequilateral. The shells of this species are also more convex than of the other two species, and the sculpture is less pronounced.

Measurements: — Length 14 mm., height 10 mm., diameter 6.8 mm.

Habitat: — The Holotype and 3 stray valves of *A. weberi* were brought up in a trawl at St. 306 (8° 27′ S., 122° 54′.5 E., 247 metres).

Genus **Theora** H. & A. Adams.

1856. *Theora* Adams, H. & A., Gen. Rec. Moll., II, p. 369.
1864. *Theora* Adams, A., Ann. Mag. Nat. Hist., (3) XIII, p. 206.
1885. *Theora* Smith, "Challenger" Lamellibranchia, p. 90.
1887. *Theora* Fischer, P., Man. Conchyliol., p. 1152.
1914. *Theora* Lamy, Journ. Conchyliol., LXI, p. 297.

The genus *Theora* was placed next to *Neaera* Gray by the brothers ADAMS, but was later removed to the Scrobiculate Tellinidae by A. ADAMS. For a discussion of the hinge reference may be made to SMITH's work cited above.

The genotype is *Theora lata* (Hinds).

1. *Theora iridescens* (Hinds).

1843. *Neaera iridescens* Hinds, Proc. Zool. Soc. London, p. 78.
1844. *Neaera iridescens* Hinds, Ann. Mag. Nat. Hist., (1) XIII, p. 309.
1845. *Neaera iridescens* Catlow & Reeve, Conch. Nomencl., p. 11.
1852. *Neaera iridescens* Jay, Catalogue (ed. IV), p. 15.
1856. *Theora iridescens* Adams, H. & A., Gen. Rec. Moll., II, p. 370.
1860. *Neaera iridescens* Reeve, Elem. Conch., II, p. 155.
1864. *Theora iridescens* Adams, A., Ann. Mag. Nat. Hist., (3) XIII, p. 209.
1868. *Theora iridescens* Tryon, Amer. Journ. Conch., IV, p. 118.
1882. *Theora iridescens* Dunker, Ind. Moll. Mar. Japon., p. 181.
1885. *Semele* (*Theora*) *iridescens* Smith, "Challenger" Lamellibranchia, p. 89, pl. V, figs. 6*a*, *b*.
1890. *Theora iridescens* Paetel, Cat. Conch. Samm., III, p. 28.
1895. *Theora iridescens* Pilsbry, Cat. Mar. Moll. Japan, p. 123.
1903. *Theora iridescens* Hidalgo, Obras Malacol., II, p. 70.
1905. *Theora iridescens* Hidalgo, Cat. Filip., p. 305.
1906. *Theora iridescens* Owston, Japan. Loochooan Shells, p. 37.
1914. *Theora iridescens* Lamy, Journ. Conchyliol., LVI, p. 298.

I have nothing to add to SMITH's very detailed description of *Theora iridescens*. The shells collected by the "Siboga" Expedition consist of dead, odd valves only, but these are in every respect similar to the types of the species from the Island of Luzon in the British Museum.

Distribution: — *T. iridescens* was described from the Island of Luzon, and has since been recorded from Japan.

The "Siboga" Expedition brought up a few dead shells in a trawl at St. 47^b (Bay of Bima; 296 metres).

Family Donacidae.

Genus **Donax** Linn.

1758. *Donax* Linnaeus, Syst. Nat., (ed. X), p. 686.
1799. *Donax* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 85.
1817. *Donax* Schumacher, Essai Nouv. Syst., p. 144.
1853. *Serrula* Mörch, Cat. Yoldi, II, p. 18.
1854. *Donax* Reeve, Conch. Icon., VIII, *Donax*, pl. I (explanation).
1856. *Donax* Adams, H. & A., Gen. Rec. Moll., II, p. 403.
1887. *Donax* Fischer, P., Man. Conchyliol., p. 1101.
1900. *Donax* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 964.
1925. *Donax* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 180.
1928. *Donax* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 205.

The status of the genus *Donax* Linn., with *D. rugosa* Linn. the type designated by Schumacher, is fully discussed by Dall. In the "Siboga" collection *Donax s. s.*, is not represented, but the subgenus *Latona*, Schumacher [1]), type *Donax* (*Latona*) *cuneata* (Linn.) is represented by two species.

1. *Donax* (*Latona*) *cuneata* (Linn.).

1685. *Tellina lata subrufa radiata* Lister, Hist. Conch., pl. CCCXCII, fig. 231.
1742. *Tellina inaequilatera*, etc., Gualtieri, Ind. Test., pl. LXXXVIII, fig. S.
1758. *Donax cuneata* Linnaeus, Syst. Nat., (ed. X), p. 683.
1764. *Donax cuneata* Linnaeus, Mus. Lud. Ulr., p. 495.
1767. *Donax cuneata* Linnaeus, Syst. Nat., (ed. XII), p. 1127.
1778. *Donax cuneata* Born, Ind. Rer. Nat., p. 43.
1780. *Donax cuneata* Born, Test. Mus. Caes. Vindobon., p. 56 (figure).
1782. *Donax cuneata Linnaei* Chemnitz, Conch.-Cab., VI, p. 266, pl. XXVI, fig. 260.
1786. *Donax cuneata* Schröter, Einleit. Conch., IV, p. 97.
1788. *Donax cuneata* Schröter, Conch.-Cab. Namen Reg., p. 30.
1790. *Donax cuneata* and *D. bicolor* Gmelin, Syst. Nat., (ed. XIII), pp. 3263, 3265.
1797. *Donax cuneata* Bruguière, Encyclopéd. Méthod., pl. CCLXII, figs. 8*a*—*c*.
1797. *Donax radiatus* Humphrey, Mus. Calonnianum, p. 47.
1798. *Donax cuneata* Röding, Mus. Boltenianum, p. 184.
1802. *Donax cuneata* Bosc, Hist. Nat. Coq., III, p. 81.
1817. *Donax cuneata* Dillwyn, Descr. Cat., I, p. 153.
1817. *Latona variabilis* Schumacher, Essai Nouv. Syst., p. 156.
1818. *Donax cuneata, D. granosa, D. australis* and *D. bicolor* Lamarck, Anim. sans Vertèb., V, pp. 546—548.
1819. *Donax cuneata* and *D. granosa* Blainville, Dict. Sci. Nat., XIII, p. 421.
1824. *Donax cuneata, D. granosa, D. australis* and *D. bicolor* Dubois, Epitome, p. 62.
1825. *Donax cuneata* Wood, Ind. Test., p. 32, pl. VI, fig. 13.
1825. *Donax cuneata* Sowerby, Cat. Tankerville, p. 11.
1827. *Donax cuneata* Crouch, Ind. Lamarck's Conch., p. 11, pl. VI, figs. 4*a*, *b*.
1830. *Donax cuneata* Sowerby, Gen. Shells, II, *Donax*, fig. 2.
1831. *Donax cuneata* and *D. obscura* Deshayes, Encyclopéd. Méthod., II, pp. 96, 98.
1834. *Donax Australis* Quoy & Gaimard, Voy. "Astrolabe", III, p. 493, pl. LXXXI, figs. 20—22.
1835. *Donax cuneata, D. granosa, D. Australis* and *D. bicolor* Deshayes in Lamarck, Anim. sans Vertèb., VI, pp. 240—243.

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[1]) Schumacher, C. F. — loc. cit., p. 156 (1817).

1839. *Donax cuneata* Anton, Verzeichniss, p. 3.
1841. *Donax cuneata* Reeve, Conch. Syst., I, p. 83, pl. LX, fig. 2.
1843. *Donax Cuneata* and *D. Australis* Hanley, Rec. Biv. Shells, pp. 79, 80, pl. XIV, fig. 29
1845. *Donax cuneata* Catlow & Reeve, Conch. Nomencl., p. 27.
1847. *Latona cuneata* Gray, Proc. Zool. Soc. London, p. 187.
1853. *Latona cuneata* Mörch, Cat. Yoldi, II, p. 17.
1854. *Donax cuneata* and *D. bicolor* Reeve, Conch. Icon., VIII, *Donax*, pl. III, figs. 15*a*, *b*; pl. V, figs. 28*a*, *b*.
1855. *Donax cuneata* Hanley, Ipsa Linn. Conch., p. 61.
1856. *Donax cuneata* Hanley in Wood, Ind. Test., p. 41, pl. VI, fig. 13.
1856. *Donax* (*Latona*) *cuneatus* Adams, H. & A., Gen. Rec. Moll., II, p. 405.
1860. *Donax cuneata* and *D. bicolor* Reeve, Elem. Conch., II, p. 120.
1862. *Donax* (*Latona*) *cuneata* Chenu, Man. Conchyliol., II, p. 72, fig. 309.
1866. *Donax cuneatus* and *D. bicolor* Sowerby, Thes. Conch., III, p. 311, pl. CCLXXXII, figs. 88, 90, pl. CCLXXXIII, figs. 102, 103.
1867. *Donax cuneata* Mitchell, Cat. Mus. Madras, p. 63.
1868. *Donax* (*Latona*) *cuneatus* Tryon, Amer. Journ. Conch., IV, p. 110.
1869. *Donax cuneatus* Dunker, Cat. Mus. Godeffroy, IV, p. 108.
1869. *Donax cuneata* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien XIX, p. 881.
1870. *Donax* (*Latona*) *cuneatus*, *D.* (*L.*) *australis* and *D.* (*L.*) *Deshayesii* Römer in Martini-Chemn. Conch.-Cab. (N. F.), X (3), *Donacidae*, p. 82, pl. II, fig. 10, pl. XIV, figs. 9, 10; p. 95, pl. XVII, figs. 4—6 and p. 98, pl. XVII, figs. 13—15.
1878. *Donax* (*Latona*) *cuneatus* Kobelt, Illustr. Conchylienbuch, p. 331, pl. XCVI, fig. 16.
1881. *Donax cuneatus* Bertin, Nouv. Arch. Mus. Paris, (2) IV, p. 114.
1881. *Latona bicolor* de Rochebrune, Bull. Soc. Philomat. Paris, (7) VI, p. 8.
1882. *Donax bicolor* Dunker, Ind. Moll. Mar. Japon., p. 194.
1884. *Donax* (*Latona*) *cuneatus* Tryon, Struct. Syst. Conch., III, p. 172, pl. CXII, fig. 82.
1884. *Donax cuneatus* and *D. bicolor* Grasset, Ind. Test. Viv., p. 258.
1887. *Donax* (*Latona*) *cuneatus* Fischer, P., Man. Conchyliol., p. 1102.
1890. *Donax* (*Latona*) *cuneatus*, *D.* (*L.*) *bicolor*, *D.* (*L.*) *australis* and *D.* (*L.*) *granosus* Paetel, Cat. Conch. Samm., III, pp. 57, 58.
1895. *Donax bicolor* Pilsbry, Cat. Mar. Moll. Japan, p. 121.
1898. *Donax* (*Latona*) *cuneatus* Melvill & Standen, Journ. Conch., IX, p. 84.
1898. *Donax* (*Latona*) *cuneatus* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 47.
1903. *Donax* (*Latona*) *cuneatus* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 293.
1903. *Donax Cuneatus* Hidalgo, Obras Malacol., II, p. 173.
1905. *Donax Cuneatus* Hidalgo, Cat. Filip., p. 322.
1909. *Donax* (*Latona*) *cuneatus* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 216.
1911. *Donax cuneatus* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 63, pl. XXII, fig. 3.
1928. *Donax bicolor*, *D. cuneatus* and *D. radians* Faustino, Summary Philippine Mar. Freshw Moll., p. 104.
1929. *Donax cuneatus* Dautzenberg, Faun. Colon. Français., III, p. 608.

The shell of *D.* (*L.*) *cuneata* is elongate-trigonal, somewhat cuneate and exhibits a great deal of variation in colour. As Lynge pointed out, shells may be entirely white with just the indications of a few radial rays, or the shells may be dark brown or lilac with rays of a darker shade; in still other cases the shells may be light yellow or dark brown with rays of a pure white colour.

Distribution: — *D.* (*L.*) *cuneata* is a widespread species of the Indo-Pacific Regions.

Two shells of this species of a light brown and two of a dark lilac colour were collected by the "Siboga" Expedition in the Bay of Pidjot, Lombok (St. 33).

2. *Donax* (*Latona*) *faba* Gmelin.

1782. *Donax Faba* Chemnitz, Conch.-Cab., VI, pp. 245, 270, pl. XXVI, figs. 266, 267.
1786. *Donax radiata* Schröter, Einleit. Conch., III, p. 104, pl. VIII, fig. 3.
1788. *Donax faba* Schröter, Conch.-Cab. Namen Reg., p. 30.
1790. *Donax Faba* and *D. radiata* Gmelin, Syst. Nat., (ed. XIII), pp. 3264, 3266.
1802. *Donax faba* Bosc, Hist. Nat. Coq., III, p. 82.
1817. *Donax faba* and *D. radiata* Dillwyn, Descr. Cat., I, p. 155.
1818. *Donax radians* Lamarck, Anim. sans Vertèb., V, p. 547.
1819. *Donax radians* Blainville, Dict. Sci., Nat., XIII, p. 421.
1824. *Donax radians* Dubois, Epitome, p. 62.
1825. *Donax Faba* and *D. radiata* Wood, Ind. Test., p. 32, pl. VI, fig. 16, 17.
1835. *Donax radians* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 241.
1839. *Donax faba* Anton, Verzeichniss, p. 3.
1843. *Donax Faba* Hanley, Rec. Biv. Shells, p. 80.
1845. *Donax radians* Catlow & Reeve, Conch. Nomencl., p. 28.
1853. *Latona faba* Mörch, Cat. Yoldi, II, p. 17.
1853. *Donax Deshayesii* Dunker, Moll. Guinea in Novitat. Conch., Suppl., II, p. 52, pl. IX, figs. 25—27.
1854. *Donax radians* Reeve, Conch. Icon., VIII, *Donax*, pl. V, figs. 26*a*—*c*.
1856. *Donax radiata* and *D. faba* Hanley in Wood, Ind. Test., p. 41, pl. VI, figs. 16, 17.
1856. *Donax* (*Latona*) *faba* Adams, H. & A., Gen. Rec. Moll., II, p. 405.
1860. *Donax radians* Reeve, Elem. Conch., II, p. 120.
1862. *Donax* (*Latona*) *radians* Chenu, Man. Conchyliol., II, p. 72, fig. 310.
1866. *Donax radians* Sowerby, Thes. Conch., III, p. 312, pl. CCLXXXIII, fig. 91—95.
1868. *Donax* (*Latona*) *faba* Tryon, Amer. Journ. Conch., IV, p. 110.
1869. *Latona faba* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 881.
1869. *Donax faba* Dunker, Cat. Mus. Godeffroy, IV, p. 108.
1870. *Donax* (*Latona*) *Faba* Römer, in Martini-Chemn. Conch.-Cab. (N. F.), X, (3), *Donacidae*, p. 88, pl. II, figs. 12, 13.
1880. *Donax faba* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 328.
1881. *Donax* (*Latona*) *faba* Bertin, Nouv. Archiv. Mus. Paris, (2) IV, p. 109.
1884. *Donax faba* and *D. radians* Grasset, Ind. Test. Viv., pp. 258, 259.
1889. *Donax faba* Morlet, Journ. Conchyliol., XXXVII, p. 171.
1890. *Donax* (*Latona*) *faba* and *D.* (*L.*) *Deshayesii* Paetel, Cat. Conch. Samm., III, p. 57.
1891. *Donax faba* Smith, Proc. Zool. Soc. London, p. 435.
1891. *Donax faba* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 241.
1892. *Donax* (*Latona*) *faba* Böttger, O., Nachrichtsbl. Deutsch. Malakozool. Ges., XXIV, p. 168.
1896. *Donax radians* Casto de Elera, Cat. Sist. Filip., p. 733.
1897. *Donax faba* Sowerby, Mar. Shells S. Africa, Supplement, p. 23.
1903. *Donax Faba* Hidalgo, Obras Malacol., II, p. 169.
1905. *Donax Faba* Hidalgo, Cat. Filip., p. 323.
1906. *Donax faba* Owston, Japan. Loochooan Shells, p. 37.
1907. *Donax radians* Hirase, Cat. Mar. Shells Japan, p. 16.
1909. *Donax faba* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 469.
1909. *Donax* (*Latona*) *faba* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 217.
1909. *Donax* (*Latona*) *faba* Melvill, Trans. Linn. Soc. London (Zool.). XIII, p. 131.
1910. *Donax faba* Hedley, Austral. Ass. Adv. Sci., XII, p. 350.
1911. *Donax faba* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVII, p. 133.
1916. *Donax faba* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 168.
1918. *Donax faba* Hedley, Journ. Roy. Soc. N. S. Wales, LI, p. M. 28.
1928. *Donax faba* Faustino, Summary Philippine Mar. Freshw. Moll., p. 104.
1929. *Donax faba* Dautzenberg, Faun. Colon. Francais., III, p. 608.

D. (*L.*) *faba* varies in colouration and form to the same extent as *D.* (*L.*) *cuneata.* Römer's figures show the great variation of the species very well.

Distribution: — *D.* (*L.*) *faba* has a wide range in the Indo-Pacific Region.

In the "Siboga" collection it is represented by a single shell collected in the Bay of Labuan Tring, west coast of Lombok (St. 19).

Family Mesodesmatidae.

Genus **Mesodesma** Deshayes.

1830. *Mesodesma* Deshayes, Encyclopéd. Méthod., II, p. 442.
1887. *Mesodesma* Fischer, P., Man. Conchyliol., p. 1112.
1895. *Mesodesma* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 911.
1914. *Mesodesma* Lamy, Journ. Conchyliol., LXII, p. 14.

Mesodesma s. s., with the genotype *Mesodesma donacium* (Lam.) is not represented in the "Siboga" collection, but the subgenera *Davila* Gray [1]) — genotype *Davila polita* Gray = *Mesodesma* (*Davila*) *planum* Hanley — and *Atactodea* Dall [2]), genotype *Mesodesma* (*Atactodea*) *glabrata* (Lam.) are represented by one species each.

1. *Mesodesma* (*Davila*) *planum* Hanley.

1843. *Mesodesma planum* Hanley, Proc. Zool. Soc. London, p. 102.
1853. *Davila polita* Gray, Ann. Mag. Nat. Hist., (2) XI, p. 44.
1854. *Mesodesma plana* Reeve, Conch. Icon., VIII, *Mesodesma*, pl. III, fig. 16.
1856. *Mesodesma planum* Hanley, Rec. Biv. Shells, Appendix, p. 341, suppl. pl. XII, fig. 19.
1857. *Davila plana* Tryon, Amer. Journ. Conch., IV, p. 126.
1887. *Mesodesma* (*Davila*) *planum* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 215.
1890. *Mesodesma plana* and *Davila plana* Paetel, Cat. Conch. Samm., III, pp. 65, 66.
1895. *Davila polita* Dall, Proc. Malacol. Soc. London, I, p. 213.
1903. *Mesodesma plana* Hidalgo, Obras Malacol., II, p. 65.
1905. *Mesodesma plana* Hidalgo, Cat. Filip., p. 304.
1909. *Davila plana* Hedley, Proc. Linn. Soc. N. S. Wales, XXXIV, p. 435.
1910. *Davila plana* Hedley, Austral. Ass. Adv. Sci., XII, p. 35.
1914. *Mesodesma* (*Davila*) *planum* Lamy, Journ. Conchyliol., LXII, p. 58.
1928. *Mesodesma plana* Faustino, Summary Philippine Mar. Freshw. Moll., p. 112.

Mesodesma (*Davila*) *planum* has a fairly thick, trigonal ovate, and very inequilateral shell, ornamented with microscopic, concentric rugae. The shell in the "Siboga" collection, which I assign to this species, is of a yellowish colour.

Distribution: — *M.* (*D.*) *planum* has been recorded from the Philippines, Australian Waters and Mergui.

In the "Siboga" collection it is represented by a single shell from the Anchorage off Dongala, Palos Bay, Celebes (St. 86).

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1) Gray, J. E. — Ann. Mag. Nat. Hist., (2) XI, p. 44 (1853), see also Dall op. cit., p. 913 (1895).

2) Dall, W. H. — Proc. Malacol. Soc. London, I, p. 213 (1895) and loc. cit., p. 911 (1895).

2. *Mesodesma* (*Atactodea*) *striata* (Gmelin).

1782. *Mactra striata* etc. Chemnitz, Conch.-Cab., VI, p. 225, pl. XXII, figs. 222, 223.
1788. *Mactra striata* Schröter, Conch.-Cab. Namen Reg., p. 60.
1790. *Mactra striata* Gmelin, Syst. Nat., (ed. XIII), p. 3257.
1797. Bruguière, Encycloped. Méthod., pl. CCLIV, fig. 4.
1817. *Mactra striata* Dillwyn, Descr. Cat., I, p. 137.
1818. *Crassatella striata* Lamarck, Anim. sans Vertèb., V, p. 483.
1823. *Mactra striata* Blainville, Dict. Sci. Nat., XXVII, p. 546.
1824. *Crassatella striata* Dubois, Epitome, p. 46.
1825. *Erycina striata* Gray, Ann. Philos., (2) IX, p. 135.
1830. *Erycina striata* Sowerby, Gen. Shells, II, *Erycina*, fig. 2.
1831. *Mesodesma striata* Deshayes, Encycloped. Méthod., II, p. 443.
1834. *Mesodesma striata* Quoy & Gaimard, Voy. "Astrolabe", III, p. 508, pl. LXXXII, figs. 15—17
1835. *Mesodesma striata* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 133.
1840. *Erycina striata* Swainson, Treat. Malacol., pp. 369, 370, figs. 118 *d*, *e*.
1840. *Crassatella striata* Pfeiffer, Krit. Reg., p. 61.
1840. *Crassatella striata* Dufo, Ann. Sci. Nat. Paris (Zool.), (2) XIV, p. 218.
1841. *Mesodesma striatum* Reeve, Conch. Syst., I, p. 65, pl. XLV, fig. 2.
1843. *Mesodesma Striata* Hanley, Rec. Biv. Shells, p. 38.
1845. *Mesodesma striatum* Catlow & Reeve, Conch. Nomencl., p. 16.
1853. *Eryx striata* Mörch, Cat. Yoldi, II, p. 16.
1854. *Mesodesma striata* Reeve, Conch. Icon., VIII, *Mesodesma*, pl. II, fig. 10.
1857. *Paphia striata* Adams, H. & A., Gen. Rec. Moll., II, p. 413.
1859. *Mesodesma striata* Fischer., P. Journ., Conchyliol., VII, p. 335.
1860. *Mesodesma striatum* Reeve, Elem. Conch., II, p. 140.
1867. *Mesodesma striatum* Mitchell, Cat. Mus. Madras, p. 68.
1867. *Mesodesma striatum* Marie, Journ. Conchyliol., XV, p. 294.
1868. *Mesodesma striatum* Colbeau, Mém. Soc. Malacol. Belgique, III, p. 104.
1868. *Paphia striata* Tryon, Amer. Journ. Conch., IV, p. 124.
1869. *Paphia striata* Dunker, Cat. Mus. Godeffroy, IV, p. 108.
1879. *Paphia striata* Brazier, Proc. Linn. Soc. N. S. Wales, IV, p. 389.
1882. *Paphia striata* Dunker, Ind. Moll. Mar. Japon., p. 195.
1884. *Paphia striata* Grasset, Ind. Test. Viv., p. 250.
1889. *Mesodesma striata* Morlet, Journ. Conchyliol., XXXVII, p. 172.
1890. *Mesodesma striata* Paetel, Cat. Conch. Samm., III, p. 65.
1891. *Mesodesma striatum* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 242.
1892. *Paphia striata* Böttger, Nachrichtsbl. Deutsch. Malakozool. Ges., XXIV, p. 168.
1895. *Paphia striata* Pilsbry, Cat. Mar. Moll. Japan, p. 118.
1899. *Atactodea striata* Hedley, Mem. Austral. Mus., III, pp. 503, 529, fig. 55.
1903. *Mesodesma striata* Hidalgo, Obras Malacol., II, p. 65.
1905. *Mesodesma striata* Hidalgo, Cat. Filip., p. 263.
1905. *Mesodesma striata* Tillier & Bavay, Bull. Soc. Zool. France, XXX, p. 177.
1906. *Atactodea striata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 467.
1906. *Paphia striata* Owston, Japan. Loochooan Shells, p. 37.
1910. *Atactodea striata* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.
1910. *Mesodesma striatum* Dautzenberg, Journ. Conchyliol., LVIII, p. 31.
1912. *Crassatella striata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 252.
1913. *Crassatella striata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XIX, p. 100.
1914. *Mesodesma* (*Atactodea*) *striata* Lamy, Journ. Conchyliol., LXII, p. 45, pl. I, fig. 9.
1928. *Mesodesma striata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 112.

Mesodesma (*Atactodea*) *striata* has, as was remarked by LYNGE, often been confused with *M.* (*A.*) *glabrata* (Lam.), but the characters noted by LAMY enable one to separate the two species without difficulty.

Distribution: — *M.* (*A.*) *striata* has a wide range of distribution in the Indo-Pacific and has also been recorded from the Red Sea.

In the "Siboga" collection it is represented by a young shell from the Bay of Bima (St. 47).

Family Mactridae.

Genus **Mactra** Linn.

1767. *Mactra* Linnaeus, Syst. Nat., (ed. XII), p. 1125.
1778. *Trigonella* Da Costa, Brit. Conch., p. 196.
1856. *Trigonella* and *Mactra* Adams, H. & A., Gen. Rec. Moll., II, pp. 375, 379.
1887. *Mactra* Fischer, P., Man. Conchyliol., p. 1115.
1894. *Mactra* Dall, Proc. Malacol. Soc. London, I, p. 211.
1898. *Mactra* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 874.
1917. *Mactra* Lamy, Journ. Conchyliol., LXIII, p. 176.
1930. *Mactra* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 206.

For discussion as to the Genotype of *Mactra* reference may be made to Stewart's work cited above. I, however, do not agree with his view that Fleming's advertisement "In the restricted genus *Mactra*, as represented by *M. saltorum* of Linnaeus" constitutes a type designation, for Linnaeus did not describe any species under the name *Mactra saltorum*.

The genotype is *Mactra stultorum* Linn., which is now generally regarded as a variety of *M. corallinum* Linn.

The other two subgenera represented in the "Siboga" collection are *Mactrotoma* Dall [1]) — type *Mactra* (*Mactrotoma*) *fragilis* Gmelin and *Mactrinula* Gray [2]) type *Mactra* (*Mactrinula*) *plicataria* Lam.

1. *Mactra* (*Mactra*) *maculata* (Gmelin).

1782. *Mactra maculata* Chemnitz, Conch-Cab., VI, pp. 208, 217, pl. XXI, figs. 208, 209.
1788. *Mactra maculata* Schröter, Conch.-Cab. Namen Reg., p. 60.
1790. *Mactra maculata* Gmelin, Syst. Nat., (ed. XIII), p. 3260.
1797. Bruguière, Encycloped. Méthod., pl. CCLIV, figs. 3*a*, *b*.
1798. *Mactra maculata* Röding, Mus. Boltenianum, p. 169.
1802. *Mactra maculata* Spengler, Skrivt. Nat. Selsk., V, p. 110.
1802. *Mactra maculata* Bosc, Hist. Nat. Coq., III, p. 113.
1817. *Mactra maculata* Dillwyn, Descr. Cat., I, p. 134.
1818. *Mactra maculata* and *M. squalida* Lamarck, Anim. sans Vertèb., V, pp. 476, 478.
1822. *Mactra maculata* and *M. squalida* Blainville, Dict. Sci. Nat., XXVII, p. 545.
1824. *Mactra maculata* and *M. squalida* Dubois, Epitome, p. 46.
1825. *Mactra maculata* Wood, Ind. Test., p. 29, pl. VI, fig. 7.
1825. *Mactra maculata* Sowerby, Cat. Tankerville, p. 7.
1833. *Mactra setosa* Quoy & Gaimard, Voy. "Astrolabe", III, p. 519, pl. LXXXIII, figs. 3, 4.
1835. *Mactra maculata* and *M. squalida* Deshayes in Lamarck, Anim. sans Vertèb., VI, pp. 102, 105.
1837. *Mactra maculata* Gray, Mag. Nat. Hist., I, p. 371.
1843. *Mactra Maculata* and *M. Squalida* Hanley, Rec. Biv. Shells, pp. 30, 31, pl. XI, fig. 30.
1845. *Mactra maculata* and *M. squalida* Catlow & Reeve, Conch. Nomencl., p. 14.

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1) Dall, W. H. — Nautilus, VIII, p. 26 (1894).
2) Gray, J. E. — Ann. Mag. Nat. Hist., (2) XI, p. 41 (1853).

1854. *Mactra Reevei* Deshayes, Proc. Zool. Soc. London (vol. for 1853) p. 15.
1854. *Mactra maculata* and *M. Reevei* Reeve, Conch. Icon., VIII, *Mactra*, pl. XII, fig. 56, pl. XVI, fig. 85.
1856. *Trigonella maculata* Adams, H. & A., Gen. Rec. Moll., II, p. 376.
1858. *Mactra Reevei* Fischer, P., Journ. Conchyliol., VII, p. 334.
1860. *Mactra maculata* and *M. Reevei* Reeve, Elem. Conch., II, p. 144.
1868. *Trigonella maculata* Conrad, Amer. Journ. Conch., III, p. 38.
1869. *Trigonella maculata* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 879.
1869. *Mactra Reevei* Dunker, Cat. Mus. Godeffroy, IV, p. 108.
1870. *Mactra maculata* Mörch, Malakozool. Blätt., XVII, p. 123.
1880. *Mactra maculata* Weinkauff in Mart.-Chemn., Conch.-Cab. (N. F.), XI, (2), *Mactra*, p. 10, pl. III, figs. 4, 5.
1881. *Mactra Reevei* Weinkauff, op. cit., p. 66, pl. XXIII, fig. 4, 4*a*.
1884. *Mactra maculata* and *M. Reevei* Grasset, Ind. Test. Viv., p. 248.
1889. *Mactra Reevei* Morlet, Journ. Conchyliol., XXXVII, p. 172.
1890. *Mactra maculata* and *M. Reevei* Paetel, Cat. Conch. Samm., III, p. 32.
1891. *Mactra Reevei* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 243.
1896. *Mactra maculata* Casto de Elera, Cat. Sist. Filip., p. 725.
1903. *Mactra maculata* Hidalgo, Obras Malacol., II, p. 48.
1905. *Mactra maculata* Hidalgo, Cat. Filip., p. 300.
1906. *Mactra maculata* Owston, Japan. Loochooan shells, p. 38.
1906. *Mactra maculata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 467.
1909. *Mactra maculata* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.
1909. *Mactra* (*Trigonella*) *maculata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Math. Nat., (7) V, pp. 220.
1914. *Mactra maculata* and *M. squalida* Lamy, Bull. Mus. d'Hist. Nat. Paris, XX, pp. 134, 243.
1914. *Mactra maculata* Smith, Proc. Malacol. Soc. London, XI, p. 143.
1917. *Mactra maculata* Lamy, Journ. Conchyliol., LXIII, p. 216.
1924. *Mactra maculata* and *M. reevei* Tomlin, Journ. Conch., XVII, p. 135.

As Lamy remarked, *M. squalida* Lam. and *M. setosa* Quoy & Gaimard are synonymous with *M. maculata*, while *M. reevei* also has been shown by Smith, Lynge and other authors to be based on shells of the same species. Lamy has given a good description of the distinguishing characters of *M. maculata*.

Distribution: — *M.* (*M.*) *maculata* is widely distributed in the Indo-Pacific Region.

The "Siboga" Expedition collected a single shell at Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago (St. 93). This shell is quite typical except that it is rather thinner than normal specimens of the species.

2. *Mactra* (*Mactra*) *artensis* Fischer.

1858. *Mactra artensis* Fischer, P., Journ. Conchyliol., VII, p. 334.
1860. *Mactra artensis* Montrouzier, Journ. Conchyliol., VIII, p. 111, pl. II, fig. 1.
1868. *Trigonella Artensis* Weinkauff in Martini-Chemn., Conch.-Cab. (N. F.), XI, (2), *Mactra*, p. 79, pl. XXVII, fig. 3.
1890. *Trigonella Artensis* Paetel, Cat. Conch. Samm., III, p. 30.
1917. *Mactra* (*Mactra*) *artensis* Lamy, Journ. Conchyliol., LXIII, p. 215.

This small-sized, almost triangular oval species has very characteristic reddish to yellowish brown stripes under a yellowish epidermis, and the nacre is of a shining rose red colour intersepted by whitish radial stripes; the outer margin is pure white. In young shells the radial stripes are not so well marked, and the nacre is also of a more brownish yellow colour.

Distribution: — *M.* (*M.*) *artensis* was described from New Caledonia.

The "Siboga" Expedition collected shells of this species at Banda Anchorage (St. 240).

3. *Mactra* (*Mactra*) *inaequalis* Reeve.

1854. *Mactra inaequalis* Reeve, Conch. Icon., VIII, *Mactra*, pl. XVII, fig. 87.
1855. *Mactra inaequalis* Deshayes, Proc. Zool. Soc. London (vol. for 1854), p. 64.
1856. *Trigonella inaequalis* Adams, H. & A., Gen. Rec. Moll., II, p. 376.
1868. *Trigonella inaequalis* Conrad, Amer. Journ. Conch., III, p. 37.
1884. *Mactra inaequalis* Weinkauff in Martini-Chemn., Conch.-Cab. (N. F.), XI (2), *Mactra*, p. 106, pl. XXXVI, fig. 1.

I refer with some doubt a number of young shells from the Bay of Badjo, west coast of Flores, to Reeve's species *M.* (*M.*) *inaequalis*. These shells are smooth, transversely ovate to subtriangular in outline, inequilateral with the anterior side somewhat longer than the posterior, obtusely rounded anteriorly and angulate posteriorly. The shells are of a yellowish colour.

Distribution: — *M.* (*M.*) *inaequalis* was described from the China Sea.

The "Siboga" specimens were collected in the Bay of Badjo, west coast of Flores (St. 50). The largest specimen is 16 mm. long, 11 mm. high, 6 mm. maximum diameter.

4. *Mactra* (*Mactra*) *mera* Reeve.

1854. *Mactra antiquata* (non Spengler) and *M. mera* Reeve, Conch. Icon., VIII, *Mactra*, pl. VI, fig. 22, pl. XVI, fig. 82.
1854. *Mactra mera* Deshayes, Proc. Zool. Soc. London (vol. for 1853) p. 16.
1856. *Trigonella mera* Adams, H. & A., Gen. Rec. Moll., II, p. 376.
1868. *Trigonella mera* Conrad, Amer. Journ. Conch., III, p. 38.
1881. *Mactra antiquata* (non Spengler) Weinkauff in Martini-Chemn., Conch.-Cab. (N. F.) XI, (2), *Mactra*, p. 41, pl. XIII, figs. 4, 5.
1884. *Mactra mera* Weinkauff, op. cit., p. 109, pl. XXXVI, fig. 7.
1914. *Mactra mera* Smith, Proc. Malacol. Soc. London, XI, p. 144.

I agree with Smith that *Mactra mera* Reeve is quite distinct from *M. antiquata* Spengler [1]). It has, however, been confused with the latter species and recorded by Reeve, Weinkauff and probably other authors.

Lamy [2]) has certainly misunderstood Reeve's *M. mera*, for it is not allied to *M. grandis* Gmelin in the synonymy of which species Lamy has included it.

Smith in the paper cited has well summarized the distinguishing characters of the species.

Distribution: — *M.* (*M.*) *mera* was described from the China Sea, but has since been recorded from the Australian waters, from round Borneo and Singapore.

In the "Siboga" collection there are shells of this species from the Bay of Labuan Tring, west coast of Lombok (St. 19) and Dobo, Aru Islands (St. 272).

5. *Mactra* (*Mactrotoma*) *aspersa* Sowerby.

1825. *Mactra aspersa* Sowerby, Cat. Tankerville, p. 7, Appendix, p. 11.
1828. *Mactra tenera* Wood, Ind. Test., Supplement, p. 4, pl. I, fig. 4*b*.

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[1]) Spengler, L. — Skrivt. Nat. Selsk., V, p. 102 (1802).

[2]) Lamy, E. — Journ. Conchyliol., LXIII, pp. 234, 235 (1917).

1837. *Spisula tenera* Gray, Mag. Nat. Hist., I, p. 373.
1843. *Mactra Aspersa* Hanley, Rec. Biv. Shells, p. 33.
1845. *Mactra aspersa* Catlow & Reeve, Conch. Nomencl., p. 13.
1854. *Mactra aspersa* and *M. egena* Reeve, Conch. Icon., VIII, *Mactra*, pl. XIV, figs. 65, 71.
1855. *Mactra Egena* Deshayes, Proc. Zool. Soc. London (vol. for 1854), p. 68.
1856. *Mactrinula Egena* and *Spisula aspersa* Adams, H. & A., Gen. Rec. Moll., II, pp. 376, 378.
1858. *Mactra aspersa* Fischer, P., Journ. Conchyliol., VII, p. 334.
1860. *Mactra aspersa* and *M. egena* Reeve, Elem. Conch., II, p. 144.
1868. *Hemimactra aspera* (sic) and *Mactrinula egena* Conrad, Amer. Journ. Conch., III, p. 32, 34,
1882. *Mactra egena* and *M. aspersa* Weinkauff in Martini-Chemn., Conch.-Cab. (N. F.), XI (2). *Mactra*, p. 76, pl. XXVI, figs. 4, 4*a*, p. 77, pl. XXVI, fig. 5.
1890. *Mactrinula egena* and *Hemimactra aspersa* Paetel, Cat. Conch. Samm., III, pp. 33, 34.
1896. *Mactra* (*Hemimactra*) *aspersa* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 198.
1903. *Mactra* (*Hemimactra*) *aspersa* Hidalgo, Obras Malacol., II, p. 49.
1905. *Mactra aspersa* Hidalgo, Cat. Filip., p. 299.
1906. ? *Mactra aspersa* Dautzenberg & Fischer, H., Camp. Sci. Prince de Monaco, Fasc. XXXII, p. 89, pl. V, figs. 8—10.
1909. *Mactra aspersa* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.
1914. *Mactra* (*Mactrinula*) *aspersa* Smith, Proc. Malacol. Soc. London, XI, p. 140.
1917. *Mactra* (*Mactrotoma*) *aspersa* Lamy, Journ. Conchyliol., LXIII, p. 257.
1924. *Mactra egena* Tomlin, Journ. Conch., XVII, p. 135.
1928. *Mactra aspersa* Faustino, Summary Philippine Mar. Freshw. Moll., p. 108.

The shells recorded under the name *Mactra aspersa* by Dautzenberg and Fischer from the West coast of Africa have, as remarked by Lamy, fewer epidermal colour markings and the sculpture "à peine plus fine", and it may probably be right to separate these under the name *M. egena* Sowerby.

The specimens in the "Siboga" collection which I refer to this species, are all young shells, not exceeding 26.5 mm. in length. The shell is thin, there are faint dark brownish blotches all over the shells, and the sculpture consists of even, low, concentric striae.

Distribution: — *M. aspersa* was described from the Philippine Islands, and has also been recorded from the Australian waters. *M. egena* was described from specimens of unknown habitat.

The "Siboga" shells of this species were collected at St. 98 (6° 9′ N., 120° 21′ E., 350 metres) and Anchorage off North Ubian (St. 99).

6. *Mactra* (*Mactrinula*) *dolabrata* Reeve. (Plate VI, figs. 3, 4).

1854. *Mactra dolabrata* Reeve, Conch. Icon., VIII, *Mactra*, pl. XIX, fig. 107.
1855. *Mactra dolabrata* Deshayes, Proc. Zool. Soc. London (vol. for 1854), p. 66.
1856. *Mactrinula dolabrata* Adams, H. & A., Gen. Rec. Moll., II, p. 377.
1860. *Mactra dolabrata* Reeve, Elem. Conch., II, p. 144.
1868. *Mactrinula dolabrata* Conrad, Amer. Journ. Conch., III, p. 34.
1884. *Mactra dolabrata* Weinkauff in Martini-Chemn., Conch.-Cab. (N. F.), XI (2), *Mactra*, p. 93, pl. XXXI, fig. 5.
1890. *Mactrinula dolabrata* Paetel, Cat. Conch. Samm., III, p. 33.
1917. *Mactra dolabrata* Lamy, Journ. Conchyliol., LXIII, p. 275.
1924. *Mactra dolabrata* Tomlin, Journ. Conch., XVII, p. 135.

A single shell in the "Siboga" collection agrees with Reeve's type of *M.* (*M.*) *dolabrata*. The shell is comparatively thin and concentrically striated with very fine, almost microscopic striae. The rounded anterior side is greatly produced, while the posterior side is obtusely angled below, and slants abruptly from the umbonal area. The escutcheon is narrowly rhomboid and concave. I figure the unique shell from the "Siboga" collection.

WEINKAUFF was of opinion that *M. dolabrata* is based on a young shell, and is probably allied to *M. explanata* Deshayes. LAMY also is of the same opinion, but in this latter species the anterior side is broad, obtuse and rather shorter than the posterior. The posterior side is described by REEVE as "slanting and attenuated, gaping"; this is far from the case in *C. dolabrata*, as the two valves fit perfectly in this species.

Distribution: — *M.* (*M.*) *dolabrata* was described from a single shell of unknown habitat.

The "Siboga" shell was collected at the Anchorage off Pulu Jedan, east coast of Aru Islands (St. 273).

Subfamily LUTRARIINAE.

Genus **Lutraria** Lamarck.

1799. *Lutraria* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 85.
1822. *Lutraria* Children, Quart. Journ. Sci. Lit. Arts, p. 86.
1856. *Lutraria* Adams, H. & A., Gen. Rec. Moll., p. 383.
1887. *Lutraria* Fischer, P., Man. Conchyliol., p. 118.
1898. *Lutraria* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 883.

DALL has discussed in detail the status of the subfamily Lutrariinae and his definition of the genus *Lutraria* does not need any elaboration.

Lutraria solenoides = *Lutraria oblonga* (Gmelin) was designated as the type of *Lutraria* by CHILDREN.

1. *Lutraria philippinarum* Reeve.

1854. *Lutraria Philippinarum* Reeve, Conch. Icon., VIII, *Lutraria*, pl. I, fig. 4.
1855. *Lutraria Philippinarum* Deshayes, Proc. Zool. Soc. London (vol. for 1854), p. 71.
1856. *Lutraria Philippinarum* Adams, H. & A., Gen. Rec. Moll., II, p. 384.
1860. *Lutraria Philippinarum* Reeve, Elem. Conch., II, p. 145.
1865. *Lutraria Philippinarum* Angas, Proc. Zool. Soc. London, p. 645.
1867. *Lutraria Philippinarum* Conrad, Amer. Journ. Conch., III, p. 43.
1884. *Lutraria Philippinarum* Grasset, Ind. Test. Viv., p. 249.
1890. *Lutraria Philippinarum* Paetel, Cat. Conch. Samm., III, p. 36.
1896. *Lutraria Philippinarum* Casto de Elera, Cat. Sist. Filip., p. 717.
1903. *Lutraria Philippinarum* Hidalgo, Obras Malacol., p. 60.
1905. *Lutraria Philippinarnm* Hidalgo, Cat. Filip., p. 302.
1910. *Lutraria Philippinarum* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.
1924. *Lutraria Philippinarum* Tomlin, Journ. Conch., XVII, p. 136.
1928. *Lutraria Philippinarum* Faustino, Summary Philippine Mar. Freshw. Moll., p. 110.

The very inequilateral, oblong-elongate shell of this species is deepest in the umbonal region; the anterior and posterior sides are attenuate, rounded and the sculpture consists of fine, concentric striae.

Distribution: *L. philippinarum* has been recorded from the Philippines and round Queensland, Australia.

In the "Siboga" collection the species is represented by two left valves collected in the Bay of Labuan Tring, west coast of Lombok (St. 19) and Ketapang Bay, west coast of Kangeang Island (St. 317).

Family VENERIDAE.

Genus **Meretrix** Lamarck.

1799. *Meretrix* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 185.
1801. *Meretrix* Lamarck, Syst. Anim. sans Vertèb., p. 122.
1806. *Cytherea* Lamarck, Ann. Mus. d'Hist. Nat. Paris, VII, p. 133.
1818. *Cytherea* Lamarck, Anim. sans Vertèb., V, p. 561.
1853. *Nympha* Mörch, Cat. Yoldi, II, p. 25.
1853. *Meretrix* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 34.
1857. *Meretrix* Adams, H. & A., Gen. Rec. Moll., II, p. 423.
1865. *Meretrix* Römer, Mon. Venus, I, p. 25.
1887. *Meretrix* Fischer, P., Man. Conchyliol., p. 1079.
1902. *Meretrix* Dall, Proc. U. S. Nat. Mus., XXVI, p. 352.
1903. *Meretrix* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1258.

DALL's works referred to above may be consulted for a good definition of the genus *Meretrix*. The genotype is *Meretrix meretrix* (Linn.).

Cytherea Lamarck (1806) is a synonym of *Meretrix* Lam., but *Cytherea* Röding (1798) is quite distinct.

1. *Meretrix meretrix* (Linn.).

1705. *Chama laevis* Rumph, Amboin. Rarit., p. 138, pl. XLIII, fig. G.
1757. *Chama albida* etc. d'Argenville, La Conch., pp. 282, 286, pl. XXI, fig. F.
1758. *Venus Meretrix* Linnaeus, Syst. Nat., (ed. X), p. 686.
1764. *Venus Meretrix* Linnaeus, Mus. Lud. Ulr., p. 501.
1767. *Venus Meretrix* Linnaeus, Syst. Nat., (ed. XII), p. 1132.
1773. *La Gourgandine* Knorr, Délices des Yeux, VI, p. 12, pl. VI, fig. 3.
1780. *Venus Meretrix* Born, Test. Mus. Caes. Vindobon., p. 65.
1782. *Venus Meretrix* etc. Chemnitz, Conch.-Cab., VI, p. 350, pl. XXXIII, figs. 347—353.
1784. *Cochlea nimbata*, *C. inscripta* and *C. virgulata* Martyn, Univ. Conch., IV, pl. CXXXVI (right figure), pl. CXLII (right figure), pl. CXLII (left figure).
1788. *Venus meretrix* Schröter, Conch. Cab. Namen Reg., p. 112.
1790. *Venus Meretrix* Gmelin, Syst. Nat. (ed. XIII), p. 3273.
1797. Bruguière, Encyclopéd. Méthod., pl. CCLXVIII, figs. 5*b*, 6, pl. CCLXIX, figs. 1*a*, *b*, 2*a*, *b*, pl. CCLXX, figs. 1*a*, *b*.
1798. *Venus lusoria* Röding, Mus. Boltenianum, p. 180.
1799. *Meretrix meretrix* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 85.
1801. *Meretrix labiosa* Lamarck, Syst. Anim. sans Vertèb., p. 122.
1802. *Venus Meretrix* Bosc, Hist. Nat. Coq., III, p. 48.
1805. *Cytherea labiosa* de Roissy in Buffon, Hist. Nat. Moll., VI, p. 337.
1817. *Cytherea ponderosa* Schumacher, Essai Nouv. Syst., p. 150, pl. XV, fig. 1.
1817. *Venus lusoria* Dillwyn, Descr. Cat., I, p. 177.
1818. *Cytherea lusoria*, *C. petechialis*, *C. impudica*, *C. castanea*, *C. zonaria*, *C. meretrix*, *C. graphica* and *C. morphina* Lamarck, Anim. sans Vertèb., V, pp. 561, 562.
1824. *Cytheria* (sic) *lusoria*, *C. petechialis*, *C. impudica*, *C. castanea*, *C. zonaria*, *C. meretrix*, *C. graphica* and *C. morphina* Dubois, Epitome, p. 69.

1825. *Cytherea petechialis*, *C. impudica*, *C. castanea*, *C. zonaria*, *C. graphica* and *C. morphina* Sowerby, Cat. Tankerville, pp. 12, 13.

1828. *Venus lusoria*, *V. petechialis*, *V. impudica*, *V. castanea*, *V. zonaria*, *V. meretrix*, *V. graphica* and *V. morphina* Blainville, Dict. Sci. Nat., LVII, pp. 263, 264.

1830. *Cytheraea* (sic) *lusoria*, *Cytherea petechialis*, *C. impudica* and *C. graphica* Deshayes, Encyclopéd. Méthod., II, pp. 53, 54.

1831. *Cytherea petechialis* Sowerby, Gen. Shells, II, *Cytherea* pl. I, fig. 1, pl. II, fig. 1.

1835. *Cytherea lusoria*, *C. petechialis*, *C. impudica*, *C. castanea*, *C. zonaria*, *C. meretrix*, *C. graphica* and *C. morphina* Deshayes in Lamarck, Anim. sans Vertèb., VI, pp. 297—300.

1840. *Cytherea impudica*, *C. meretrix* and *C. castanea* Pfeiffer, Krit. Reg., p. 63.

1841. *Cytherea petechialis* Reeve, Conch. Syst., I, p. 94, pl. LXIX, fig. 1, pl. LXX, fig. 1.

1841. *Cytherea meretrix* Delessert, Rec. Coq. Lamarck, pl. VIII, figs. 1 *a*, *b*, *c*.

1842. *Cytherea Meretrix* Sowerby, Conch. Man., p. 297, fig. 117.

1843. *Cytherea Lusoria*, *C. Petechialis*, *C. Impudica*, *C. Castanea*, *C. Meretrix*, *C. Graphica*, *C. Morphina* and *C. Zonaria* Hanley, Rec. Biv. Shells, p. 96; p. 96, pl. XV, fig. 9; p. 96, pl. XI, fig. 10; p. 96, pl. XV, fig. 8; p. 96, pl. XV, fig. 11; p. 96, pl. XV, fig. 10.

1844. *Cytherea castanea* Potiez & Michaud, Gal. Douai, II, p. 229.

1845. *Cytherea fusca* Philippi, Abbild. Beschreib. Conch., I, p. 197, *Cytherea*, pl. III, fig. 1.

1845. *Cytherea castanea*, *C. graphica*, *C. impudica*, *C. lusoria*, *C. meretrix*, *C. morphina*, *C. petechialis* and *C. zonaria* Catlow & Reeve, Conch. Nomencl., pp. 37—40.

1847. *Cytherea zonaria*, *C. petechialis*, *C. impudica*, *C. lusoria*, *C. castanea*, *C. morphina*, *C. graphica* and *C. meretrix* Chenu, Illustr. Conchyliol., *Cytherea* pl. I, figs. 1, 1*a*—*c*; 4, 4*a*—*c*; 5; 6, 6*a*—*c*; pl. II, figs. 1, 1*a*—*c*; 2, 2*a*—*c*; 4, 4*a*—*c*; 7, 7*a*, *b*.

1847. *Meretrix Meretrix* Gray, Proc. Zool. Soc. London, p. 183.

1851. *Cytherea meretrix*, *C. petechialis*, *C. lusoria*, *C. zonaria* and *C. impudica* Sowerby, Thes. Conch., II, p. 619, pl. CXXIX, figs. 48—50; p. 619, pl. CXXIX, fig. 51; p. 620, pl. CXXVIII, figs. 40—42; p. 620, pl. CXXIX, figs. 53, 54; p. 621, pl. CXXIX, figs. 55—58.

1853. *Meretrix petechialis*, *M. inscripta*, *M. impudica* and *M. ponderosa* Mörch, Cat. Yoldi, II, p. 28.

1853. *Meretrix Lusoria*, *M. petechialis*, *M. impudica*, *M. Morphina*, *M. graphica*, *M. fusca*, *M. castanea* and *M. zonaria* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc., pp. 35—39.

1855. *Venus meretrix* Hanley, Ipsa Linn. Conch., p. 70.

1856. *Cytherea meretrix* Hanley in Wood, Ind. Test., p. 46, pl. VII, fig. 47.

1856. *Cytherea meretrix*, *C. morphina* and *C. petechialis* Jay, Japan. Exped. p. 292, pl. II, figs. 1, 2; p. 293, pl. II, figs. 3, 4, 5, 10; p. 293, pl. II, figs. 6—9.

1857. *Venus meretrix*, *V. petechialis* and *V. lusoria* Römer, Krit. Untersuch., pp. 41—43.

1857. *Meretrix impudica* Adams, H. & A., Gen. Rec. Moll., II, pp. 423, 424, pl. CVII, figs. 6, 6*a*.

1857. *Meretrix castanea*, *M. fusca*, *M. graphica*, *M. lusoria*, *M. morphina*, *M. petechialis* and *M. zonaria* Adams, H. & A., Gen. Rec. Moll., II, p. 424.

1860. *Cytherea* (*Meretrix*) *zonaria* and *C.* (*M.*) *impudica* von Martens, Proc. Zool. Soc. London, p. 17.

1860. *C. impudica*, *C. lusoria*, *C. meretrix*, *C. morphina*, *C. petechialis* and *C. zonaria*, Reeve, Elem. Conch., II, pp. 108, 109.

1861. *Venus* (*Cytherea-Meretrix*) *meretrix*, *V.* (*C. M.*) *petechialis* and *V.* (*C. M.*) *lusoria* Römer Malakozool. Blätt., VIII, pp. 45—47.

1862. *Cytherea luzoria* (sic), *C. zonaria* and *C. petechialis* Chenu, Man. Conchyliol., II, p. 86, figs. 375; 373, 374; 376.

1864. *Cytherea castanea*, *C. petechialis*, *C. zonaria*, *C. impudica*, *C. morphina*, *C. lusoria* and *C. astricta* Reeve, Conch. Icon., XIV, *Cytherea*, pl. II, figs. 6; 7*a*, *b*; pl. III, figs. 9*a*, *b*; 10; pl. IV, fig. 12; pl. VI, fig. 20; pl. VII, fig. 26.

1865. *Venus* (*Cytherea-Meretrix*) *meretrix*, *V.* (*C.*, *M.*) *petechialis* and *V.* (*C.*, *M.*) *lusoria* Römer, Mon. Venus, I, p. 27, pl. VIII, figs. 1, 1 *a*—*h*; p. 29, pl. IX, figs. 1, 1*a*—*d*; p. 30, pl. XI, fig. 2, 2*a*; pl. XII, figs. 1, 1*a*—*c*.

1868. *Cytherea lusoria, C. meretrix, C. impudica* and *C. petechialis* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI, (1) *Veneracea*, p. 13, pl. I, fig. 6; p. 15, pl. III, figs. 4—6, 8, 9; p. 17, pl. III, fig. 7; pl. IV, fig. 1—4.

1869. *Meretrix castanea, M. impudica, M. morphina* and *M. petechialis* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 882.

1869. *Cytherea meretrix* Lischke, Japan. Meeresconch., I, p. 122.

1869. *Meretrix morphina* and *M. zonaria* Adams, A., Ann. Mag. Nat. Hist. (4) III, p. 231.

1871. *Cytherea meretrix* Lischke, Japan. Meeresconch., II, p. 108.

1878. *Cytherea* (*Meretrix*) *meretrix* and *C.* (*M.*) *petechialis* Kobelt, Illustr. Conchylienbuch, p. 334, pl. XCVIII, fig. 1.

1882. *Cytherea* (*Meretrix*) *lusoria, C.* (*M.*) *meretrix* and *C.* (*M.*) *morphina* Dunker, Ind. Moll. Mar. Japon., p. 199.

1884. *Cytherea petechialis* Tryon, Struct. Syst., Conch., III, p. 177, pl. CXIII, fig. 20.

1887. *Cytherea petechialis* Dautzenberg & d'Hamonville, Journ. Conchyliol., XXXV, p. 225.

1889. *Meretrix petechialis* Morlet, Journ. Conchyliol., XXXVII, p. 169.

1890. *Meretrix petechialis* Grosse & Fischer, P., Journ. Conchyliol., XXXVIII, p. 18.

1891. *Meretrix petechialis, M. lusoria, M. zonaria* and *M. impudica* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 232.

1892. *Cytherea* (*Meretrix*) *meretrix* Böttger, O., Nachrichtsbl. Deutsch. Malakozool. Ges., XXIV, p. 168.

1893. *Meretrix morphina* and vars. *castanea, petechialis* and *impudica* Melvill & Abercrombie, Mem. Proc. Manchester Lit. Phil. Soc., (4) VII, p. 29.

1895. *Meretrix meretrix, M. morphina* and *M. lusoria* Pilsbry, Cat. Mar. Moll. Japan, pp. 126, 127.

1896. *Meretrix petechialis, M. impudica, M. morphina, M. graphica* and *M. castanea* Casto de Elera, Cat. Sist. Filip., pp. 737—739.

1897. *Cytherea meretrix* von Martens, Weber's Zool. Ergebn. Reise Ost-Ind., IV, Süss.-Brackw. Moll., p. 291.

1898. *Meretrix castanea* Melvill & Standen, Journ. Conch., IX, p. 82.

1903. *Meretrix petechialis, M. Meretrix, M. impudica, M. morphina* and *M. graphica* Hidalgo, Obras Malacol., II, pp. 178, 179, 184, 187, 188.

1905. *Meretrix petechialis, M. Meretrix, M. impudica, M. morphina* and *M. graphica* Hidalgo, Cat. Filip., pp. 324, 325.

1905. *Meretrix meretrix* Dautzenberg, P. & Fischer, H., Journ. Conchyliol., LIII, pp. 216, 461.

1906. *Meretrix meretrix* Dautzenberg, P. & Fischer, H., Journ. Conchyliol., LIV, p. 216.

1906. *Meretrix impudica* and vars. *castanea, morphina, M. petechialis* and *M. zonaria* Melvill & Standen, Proc. Zool. Soc. London, p. 829.

1906. *Meretrix meretrix, M. morphina* and *M. lusoria* var. *petechialis* Owston, Japan. Loochooan Shells, p. 38.

1909. *Meretrix lusoria* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 468.

1909. *Cytherea* (*Meretrix*) *meretrix* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 169.

1916. *Meretrix meretrix* Annandale & Kemp, Mem. Ind. Mus., V, pp. 333, 351.

1917. *Meretrix meretrix* and vars. *impudica, castanea, aurora, zonaria* and *morphina* Hornell, Rec. Ind. Mus., XIII, pp. 155—163, pl. V, figs. 13; 14—18; pl. VII, figs. 39—40; pl. IV, fig. 12; pl. IV, figs. 9—11; pl. IV, figs. 5—8.

1925. *Meretrix meretrix* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N⁰ 9, p. 281.

1928. *Meretrix graphica, M. impudica, M. lusoria, M. meretrix, M. morphina* and *M. petechialis* Faustino, Summary Philippine Mar. Freshw. Moll., p. 72.

Meretrix meretrix is probably one of the most variable bivalves and shells slightly varying in colour and form have been described as distinct species. DAUTZENBERG and FISCHER critically studied the different variations of *M. meretrix*, and shortly described the distinguishing characters of the colour varieties *typica*, *castanea*, *graphica* and *petechialis*. HORNELL later published a useful revision of the Indian species of *Meretrix*.

In general I find that the conclusions of DAUTZENBERG and FISCHER are fully borne out by my work. I, however, agree with TOMLIN in regarding these differently coloured forms as colour phases rather than as distinct varieties of *M. meretrix*.

In the "Siboga" collection the only type represented is the phase *castanea* (Lam.). These shells are of a uniform brownish grey or chestnut colour with the slightly convex post-dorsal area, with the vulva (of HORNELL) of a darker shade than the rest of the shell; the area, however, is not so dark or marked off as in the forma *typica*.

Distribution: — *M. meretrix* has a wide range in the Indo-Pacific Region. A detailed list of the records of the species was published by OOSTINGH.

In the "Siboga" collection the species is represented by two young shells collected in the Bay of Pidjot, Lombok (St. 33).

Genus **Macrocallista** Meek.

1876. *Macrocallista* Meek, Palaeontol. Upper Missouri, p. 179.
1902. *Macrocallista* Dall, Proc. U. S. Nat. Mus., XXVI, p. 351.
1903. *Macrocallista* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1251.
1913. *Callista* Jukes-Browne, Proc. Malacol. Soc. London, X, p. 344.
1914. *Callista* Jukes-Browne, Proc. Malacol. Soc. London, XI, p. 60.
1924. *Notocallista* Iredale, Proc. Linn. Soc. N. S. Wales, XLIX, p. 210.

I agree with DALL that the generic name *Callista* of Poli having been used by LEACH for *Venus verrucosa* Linn. cannot be accepted for the species for which it was later adopted by MÖRCH, GRAY, RÖMER and other authors. The next available name is *Macrocallista* Meek, with *Macrocallista nimbosa* (Solander) as the genotype. IREDALE's new generic name *Notocallista* is an absolute synonym of *Macrocallista*.

1. *Macrocallista phasianella* (Deshayes).

1853. *Dione phasianella* Deshayes, Proc. Zool. Soc. London, p. 2.
1853. *Dione phasianella* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 64.
1857. *Callista phasianella* Adams, Gen. Rec. Moll., II, p. 426.
1863. *Dione phasianella* Reeve, Conch. Icon., XIV, *Dione*, pl. XII, fig. 56.
1867. *Venus* (*Cytherea, Callista*) *phasianella* Römer, Mon. Venus, I, p. 62.
1884. *Cytherea phasianella* Grasset, Ind. Test. Viv., p. 265.
1890. *Callista phasianella* Paetel, Cat. Conch. Samm., III, p. 70.
1903. *Callista florida* (ex parte), Hidalgo, Obras Malacol., II, p. 195.
1906. *Callista phasianella* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 293.
1906. *Callista phasianella* Melvill & Standen, Proc. Zool. Soc. London, p. 830.
1911. *Venus* (*Callista*) *phasianella* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 52, 53, pl. XIX, fig. 10.

In the above synonymy I have not included RÖMER's figures of the species on pl. XVII (figs. 4, 4*a*, *b*) as they do not agree in outline or sculpture with shells of this species.

M. phasianella has a rather oblongate-ovate, sometimes trigonal and solid shell, with somewhat prominent and forwardly inclined umbones. The sculpture consists of rather flat concentric, broad hand-like ridges separated by only superficial linear grooves. The sculpture is better developed on the anterior half of the valves, and in most young shells the posterior half is almost smooth. The periostracum is very shining, of a varnished, fulvous colour, with white and chocolate spots in the umbonal area. The species is closely allied to *M. florida* (Lam.), but it never attains the size of that species, and differs in outline, sculpture and colour.

Distribution: — *M. phasianella* was described from shells without a definite locality, but the species has since been recorded from Japan, the Philippines and the Persian Gulf.

In the "Siboga" collection it is represented by a good series of shells from the Borneo Bank (St. 80), Anchorage off Lirung, Salibabu Island (St. 133), Saleyer Anchorage (St. 213), Banda Anchorage (St. 240), Kulewatti Bay, Dammer Island (St. 277), Rumah-Kuda Bay, Roma Island (St. 279) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

A full-grown shell of a cream colour with a few brownish spots in the umbonal region collected at Tual Anchorage, Kei Islands (St. 258), also belongs to this species.

2. *Macrocallista roseotincta* (Smith). (Plate VI, figs. 3, 4).

1885. *Cytherea* (*Callista*) *roseotincta* Smith, "Challenger" Lamellibranchia, p. 136, pl. I, figs. 6, 6*a*, *b*.
1890. *Callista roseotincta* Paetel, Cat. Conch. Samm., III, p. 70.
1896. *Callista roseotincta* Casto de Elera, Cat. Sist. Filip., p. 741.
1903. *Callista roseotincta* Hidalgo, Obras Malacol., II, p. 193.
1905. *Callista roseotincta* Hidalgo, Cat. Filip., p. 326.
1928. *Meretrix* (*Callista*) *roseotincta* Faustino, Summary Philippine Mar. Freshw. Moll., p. 73.

Two young shells collected at Banda Anchorage (St. 240) agree in all respects with Smith's description and the types of *M. roseotincta* in the British Museum (Nat. Hist.), London, from the Philippines. The shells have two broad rosy-red to chocolate rays running downwards from the umbones on the insides of the shell. The periostracum of the "Siboga" shells is somewhat rubbed off, but the fine, concentric striae on the surface of the shells are present.

A shell collected at Rumah-Kuda Bay, Roma Island (St. 279), differs in size and colouration, but agrees in outline, form and sculpture with normal shells of *M. roseotincta*, and is identified as a worn shell of this species; I figure this shell.

M. roseotincta has so far been recorded from the Philippines only.

3. *Macrocallista* sp.

A number of young shells dredged at Banda Anchorage (St. 240) cannot be referred with certainty to any known species of the genus *Macrocallista* Meek.

Genus **Hysteroconcha** P. Fischer.

1887. *Hysteroconcha* Fischer, P., Man. Conchyliol., p. 1079.
1902. *Hysteroconcha* Dall, Proc. U. S. Nat. Mus., XXVI, p. 354.
1903. *Hysteroconcha* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1265.
1925. *Hysteroconcha* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 154.

I differ from Dall in considering *Hysteroconcha* as being equal in rank to *Pitar* Römer, and not a subgenus of the latter. This course seems fully justified by the difference in the forms of the shells of the two genera. The genotype is *Hysteroconcha dione* (Linn.).

In the "Siboga" collection there are no representatives of *Hysteroconcha s. s.*, and the only two East-Indian species in the collection appear to belong to the subgenus *Lamelliconcha* Dall[1]), the type of which is *Hysteroconcha* (*Lamelliconcha*) *concinna* (Sowerby).

1. *Hysteroconcha* (? *Lamelliconcha*) *philippinarum* (Hanley). (Plate VI, figs. 7—10).

1844. *Cytherea Philippinarum* Hanley, Proc. Zool. Soc. London, p. 110.
1851. *Cytherea Mendanae* Philippi, Zeitschr. Malakozool., VIII, p. 72.
1851. *Cytherea Philippinarum* Sowerby, Thes. Conch., II, p. 627, pl. CXXXVI, fig. 176.
1853. *Meretrix Philippinarum* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc., p. 39.
1856. *Cytherea Philippinarum* Hanley, Rec. Biv. Shells, p. 356, pl. XV, fig. 36.
1857. *Meretrix Philippinarum* Adams, H. & A., Gen. Rec. Moll., II, p. 424.
1860. *Cytherea Philippinarum* Reeve, Elem. Conch., II, p. 108.
1863. *Venus* (*Cytherea-Dione*) *Philippinarum* Römer, Malakozool. Blätt., X, p. 36.
1864. *Cytherea Philippinarum* Reeve, Conch. Icon., XIV, *Cytherea*, pl. X, figs. 47 *a*, *b*.
1868. *Venus* (*Cytherea-Dione*) *Philippinarum* Römer, Mon. Venus, I, p. 139, pl. XXXVII, figs. 2, *a*—*e*.
1869. *Meretrix Philippinarum* Dunker, Cat. Mus. Godeffroy, IV, p. 110.
1884. *Cytheraea* (sic) *Philippinarum* Grasset, Ind. Test. Viv., p. 266.
1885. *Cytherea* (*Dione*) *philippinarum* Smith, "Challenger" Lamellibranchia, p. 141.
1890. *Dione* (*Dione*) *Philippinarum* Paetel, Cat. Conch. Samm., III, p. 73.
1896. *Dione Philippinarum* Casto de Elera, Cat. Sist. Filip., p. 739.
1898. *Dione Philippinarum* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 47.
1901. *Dione Philippinarum* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math. Nat. LXIX, p. 280.
1903. *Dione Philippinarum* Hidalgo, Obras Malacol., II, p. 197.
1905. *Dione Philippinarum* Hidalgo, Cat. Filip., p. 326.
1906. *Meretrix* (*Dione*) *Philippinarum* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 211.
1911. *Dione philippinarum* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 52, 53.
1928. *Meretrix* (*Dione*) *philippinarum* Faustino, Summary Philippine Mar. Freshw. Moll., p. 74.

Römer's description of this species is very complete and his figures of the shell are excellent. Young shells are somewhat trigonal, but the adults take on a more oval outline. The sculpture consists of concentric, rounded ridges separated by slightly narrower, but deep and regular furrows.

The largest shell in the "Siboga" collection is much bigger than any of the shells so far recorded; its measurements are: — length 23 mm., height 19.2 mm., diameter 13.7 mm.

Distribution: — *H.* (? *L.*) *philippinarum* was described from the Philippines, and has since been recorded from the Fiji Islands, the Andamans and the Red Sea.

In the "Siboga" collection the species is represented by a good series of shells of all ages from the Anchorage off Djankar, Java (St. 4), Bay of Pidjot, Lombok (St. 33), Bay of Nangamessi, Sumba (St. 53), Borneo bank (St. 80), the Anchorage off Lirung, Salibabu Island (St. 133), Sanana Bay, east coast of Sula Besi (St. 193), Saleyer Anchorage (St. 213), Banda Anchorage (St. 240), Kulewatti Bay, Dammer Island (St. 277) and Rumah-Kuda Bay, Roma Island (St. 279).

3. *Hysteroconcha* (? *Lamelliconcha*) *dautzenbergi* sp. nov. (Plate VI, figs. 11, 12).

Hysteroconcha (? *Lamelliconcha*) *dautzenbergi* is closely allied to *H.* (? *L.*) *philippinarum* (Hanley), but its shell is more trigonal and more tumid. The umbones, which are slightly more prominent, are greatly curved forwards and inwards. The sculpture of the two species is very different; as remarked above, the rounded, concentric ridges on the shells of *H.* (? *L.*) *philippinarum* are separated by deep, regular furrow-like interspaces, only slightly narrower than the ridges themselves, in *H.* (? *L.*) *dautzenbergi*, on the other hand, the ridges are band-like, and are separated from one another by thread-like, shallow grooves only. The pallial sinus of the new species is also deeper, and the shells have inverted V-shaped markings of a brownish colour on a creamy background.

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[1]) Dall, W. H. — Proc. U. S. Nat. Mus., XXVI, p. 354 (1902).

Measurements of Holotype: — Length 16 mm., height 13.5 mm., diameter 10.5 mm.

Habitat: — The holotype and a few stray valves were dredged at Banda Anchorage (St. 240).

Genus **Lioconcha** Mörch.

1853. *Lioconcha* Mörch, Cat. Yoldi, II, p. 26.
1857. *Lioconcha* Adams, H. & A., Gen. Rec. Moll., II, p. 429.
1868. *Lioconcha* Römer, Mon. Venus, I, p. 147.
1887. *Lioconcha* Fischer, P., Man. Conchyliol., p. 1080.
1902. *Lioconcha* Dall, Proc. U. S. Nat. Mus., XXVI, p. 351.
1903. *Lioconcha* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1251.

Lioconcha is a good genus with a large solid, porcellanous smooth or concentrically sculptured shell. It was regarded by some of the earlier authors as a synonym or a subgenus of *Circe* Schumacher, but the hinge of the two types is quite different. The genotype is *Lioconcha castrensis* (Linn.).

1. *Lioconcha polita* (Röding).

1782. *Venus castrensis* Chemnitz (ex parte), Conch.-Cab., VI, pp. 364, 365, pl. XXXV, figs. 371, 372.
1798. *Venus polita* Röding, Mus. Boltenianum, p. 181.
1818. *Cytherea sulcatina* Lamarck, Anim. sans Vertèb., V, p. 568.
1824. *Cytheria* (sic) *sulcatina* Dubois, Epitome, p. 70.
1835. *Cytherea sulcatina* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 308.
1838. *Chione sulcatina* Gray, Analyst, VIII, p. 305.
1843. *Cytherea Sulcatina* Hanley, Rec. Biv. Shells, p. 99, pl. IX, fig. 13.
1845. *Cytherea sulcatina* Catlow & Reeve, Conch. Nomencl., p. 40.
1846. *Cytherea Sulcatina* Chenu, Illustr. Conchyliol., *Cytherea*, pl. XIV, figs. 4*a*, *b*.
1851. *Cytherea sulcatina* Sowerby, Thes. Conch., II, p. 641, pl. CXXXIV, figs. 145, 146.
1853. *Circe sulcatina* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc., p. 95.
1855. *Cytherea sulcatina* Berge, Conchylienbuch, p. 56.
1857. *Cytherea sulcatina* Römer, Krit. Untersuchungen, p. 46.
1860. *Cytherea sulcatina* Reeve, Elem. Conch.. II, p. 109.
1862. *Circe sulcatina* Chenu, Man. Conchyliol., II, p. 89, fig. 397.
1862. *Lioconcha sulcatina* Römer, Malakozool. Blätt., IX, p. 145.
1863. *Circe sulcatina* Reeve, Conch. Icon., XIV, *Circe*, pl. IX, fig. 40.
1868. *Venus* (*Cytherea*, *Lioconcha*) *sulcatina* Römer, Mon. Venus, I, p. 16, pl, XLVI, figs. 1, 1*a*—*c*.
1868. *Cytherea sulcatina* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (1), *Veneracea*, p. 36, pl. XII, figs. 1, 2.
1869. *Circe* (*Lioconcha*) *sulcatina* Dunker, Cat. Mus. Godeffroy, IV, p. 111.
1884. *Cytherea sulcatina* Grasset, Ind. Test. Viv., p. 266.
1890. *Lioconcha Sulcatina* Paetel, Cat. Conch. Samm., III, p. 74.
1895. *Lioconcha sulcatina* Melvill & Standen, Journ. Conch., VIII, p. 266.

1896. *Lioconcha sulcatina* Casto de Elera, Cat. Sist. Filip, p. 744.
1898. *Lioconcha sulcatina* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 47.
1903. *Lioconcha sulcatina* Hidalgo, Obras Malacol., II, p. 219.
1905. *Meretrix* (*Lioconcha*) *sulcatina* Anthony, Bull. Mus. d'Hist. Nat. Paris, XI, p. 494.
1905. *Lioconcha sulcatina* Hidalgo, Cat. Filip.. p. 329.
1909. *Circe* (*Lioconcha*) *sulcatina* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 233.

As Röding's *polita* and Lamarckian *sulcatina* are both based on figures 371, 372 of *Venus castrensis* in Chemnitz, the correct name for this bivalve is *Lioconcha polita* (Röding) and not *Lioconcha sulcatina* (Lamarck).

Distribution: — *L. polita* has a wide range in the Indo-Pacific.

In the "Siboga" collection there is a single full grown shell of the species collected at Macassar (St. 71).

2. *Lioconcha ornata* (Dillwyn).

1685. *Pectunculus Reticulatus* Lister, Hist. Conch., pl. CCLIX, fig. 95.
1782. *Venus castrensis* Chemnitz, (ex parte, nec Linnaeus), Conch.-Cab., VI, p. 366, pl. XXXV, figs. 380, 381.
1788. *Venus castrensis* Schröter, Conch.-Cab. Namen Reg., p. 112.
1817. *Venus Ornata* Dillwyn (nec Lamarck), Descr. Cat., I, p. 184.
1818. *Cytherea picta* Lamarck, Anim. sans Vertèb., V, p. 569.
1824. *Cytheria* (sic) *picta* Dubois, Epitome, p. 70.
1825. *Cytherea picta* Sowerby, Cat. Tankerville, p. 13.
1828. *Venus picta* Blainville, Dict. Sci. Nat., LVII, p. 266.
1830. *Cytherea picta* Deshayes, Encyclopéd. Méthod., II, p. 57.
1835. *Cytherea picta* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 309.
1838. *Circe picta* Gray, Analyst, VIII, p. 307.
1843. *Cytherea picta* Hanley, Rec. Biv. Shells, p. 100.
1844. *Cytherea picta* Potiez & Michaud, Gal. Douai, II.
1845. *Cytherea picta* Catlow & Reeve, Conch. Nomencl., p. 39.
1846. *Cytherea picta* Chenu, Illustr. Conchyliol., *Cytherea*, pl. VIII, figs. 7 *a*, *b*.
1847. *Cytherea peinte* Chenu, Léçons Elem. Conch., pl. II, fig. 1.
1851. *Cytherea ornata* var. *picta* Sowerby, Thes. Conch., II, p. 642.
1853. *Circe picta* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 95.
1853. *Lioconcha ornata* Mörch, Cat. Yoldi, II, p. 26.
1855. *Cytherea picta* Berge, Conchylienbuch, p. 55.
1857. *Cytherea picta* Römer, Krit. Unters., p. 47.
1860. *Cytherea picta* Reeve, Elem. Conch., II, p. 108.
1862. *Lioconcha picta* Römer, Malakozool. Blätt., IX, p. 144.
1863. *Circe picta* Reeve. Conch. Icon., XIV, *Circe*, pl. IX, figs. 42*a*, *b*.
1868. *Venus* (*Cytherea*, *Lioconcha*) *picta* Römer, Mon. *Venus*, I, p. 164, pl. XLV, figs. 3, 3*a*—*e*.
1868. *Cytherea picta* Pfeiffer, Martini-Chemn. Conch.-Cab., (N. F.), XI, (I), *Veneracea*, p. 39, pl. XIII, figs. 14, 15.
1869. *Circe* (*Lioconcha*) *picta* Dunker, Cat. Mus. Godeffroy, IV, p. 111.
1869. *Circe* (*Lioconcha*) *ornata* Adams, A., Ann. Mag. Nat. Hist., (3) IV, p. 233.
1870. *Circe* (*Lioconcha*) *picta* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1878. *Cytherea* (*Lioconcha*) *picta* Kobelt, Illustr. Conchylienbuch, p. 335.
1880. *Circe* (*Lioconcha*) *picta* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 325
1882. *Lioconcha ornata* Dunker, Ind. Moll. Mar. Japon., p. 202.
1884. *Cytherea picta* Grasset, Ind. Test. Viv., p. 266.
1886. *Lioconcha picta* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 101.

1888. *Lioconcha picta* Jousseaume, Mém. Soc. Zool. France, I, p. 208.
1890. *Lioconcha picta* Paetel, Cat. Conch. Samm., III, p. 74.
1892. *Lioconcha picta* Sowerby, Mar. Shells S. Africa, Supplement, p. 24.
1892. *Cytherea* (*Lioconcha*) *picta* Böttger, O., Nachrichtsbl. Deutsch. Malakozool. Ges., XXIV, p. 168.
1895. *Lioconcha picta* Melvill & Standen, Journ. Conch., VIII, p. 129.
1895. *Lioconcha ornata* Pilsbry, Cat. Mar. Moll. Japan, p. 127.
1896. *Lioconcha picta* Casto de Elera, Cat. Sist. Filip., p. 743.
1898. *Lioconcha picta* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 47.
1899. *Lioconcha picta* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 194.
1899. *Circe picta* Hedley, Mem. Austral. Mus., III, pp. 501, 529.
1902. *Lioconcha picta* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 625.
1903. *Lioconcha picta* Hidalgo, Obras Malacol., II, p. 215.
1905. *Lioconcha picta* Hidalgo, Cat. Filip., p. 329.
1905. *Lioconcha picta* Tillier & Bavay, Bull. Soc. Zool. France, XXX, p. 177.
1905. *Meretrix* (*Lioconcha*) *picta* Anthony, Bull. Mus. d'Hist. Nat. Paris, XI, p. 494.
1906. *Lioconcha picta* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 292.
1906. *Lioconcha picta* Melvill & Standen, Proc. Zool. Soc. London, p. 830.
1906. *Lioconcha ornata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1906. *Lioconcha ornata* Owston, Japan. Loochooan Shells, p. 38.
1909. *Lioconcha picta* Melvill, Trans. Linn. Soc. London, XIII, p. 132.
1909. *Circe* (*Lioconcha*) *picta* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 232.
1909. *Meretrix* (*Lioconcha*) *picta* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 468.
1910. *Lioconcha ornata* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1910. *Lioconcha picta* Dautzenberg, Bull. Inst. Océan. Monaco, N⁰ 161, p. 3.
1911. *Venus* (*Lioconcha*) *picta* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 52, 53.
1925. *Lioconcha ornata* Oostingh, Geol. Comm. Agri. Univ. Wageningen, N⁰ IX, p. 293.

DILLWYN's specific name *ornata* has priority over the Lamarckian *picta*. It may also be noted here that the Lamarckian *ornata* 1) is not the same as the present species.

L. ornata is a very variable species, and specimens even from the same locality exhibit differences in outline and colour of the shells. The "Siboga" shells agree in general with the Philippine shells in the British Museum Collection.

Distribution: — *L. ornata* has a wide range in the Indo-Pacific Region. A detailed list of its records was published by LYNGE.

In the "Siboga" collection it is represented from near reef of Batjulmati, Java (St. 7), Bay of Pidjot, Lombok (St. 33), Sailus Ketjil, Paternoster Islands (St. 37), Bay of Bima (St. 47), Bay of Badjo, west coast of Flores (St. 50), Kambaragi bay, Tanah Djampeah (St. 64), Bank between the Islands of Bahuluwang and Tambolungan, South of Saleyer (St. 66), Kulewatti Bay, Dammer Island (St. 277), Buka Bay, south coast of Rotti Island (St. 299), Pepela Bay, east coast of Rotti Island (St. 301), Sapeh Bay, east coast of Sumbawa (St. 311) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

3. *Lioconcha* sp.

There is also a single right valve of a species of the genus *Lioconcha* collected in the Bay of Pidjot. Lombok. This shell is rather worn and it is not possible to be absolutely certain, but it appears to be a shell of *L. tigrina* (Lamarck 2)).

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1) LAMARCK, J. B. — Anim. sans Vertèb., V, p. 568 (1818).
2) LAMARCK, J. B. — Anim. sans Vertèb., V, p. 569 (1818). Also see REEVE, L., Conch. Icon., XIV, *Circe*, pl. VIII, fig. 32*a* (1863).

Genus **Pitar** Römer.

1857. *Pitar* Römer, Krit. Untersuch., p. 15.
1862. *Caryatis* Römer, Malakozool. Blätt., IX, p. 58.
1902. *Pitaria* Dall, Proc. U. S. Nat. Mus., XXVI, p. 353.
1903. *Pitaria* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1264.
1914. *Pitaria* Jukes-Browne, Proc. Malacol. Soc. London, XI, p. 61.
1925. *Pitar* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 152.
1930. *Pitar* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 232.

The orthography of the generic name *Pitar* and its modification *Pitaria*, as suggested by DALL, has been discussed at length by STEWART. He has also fully elucidated the question of the genotype-*Pitar tumens* (Gmelin), and I agree with his conclusions in all details. Good definitions of the genus are published in the works of DALL, RÖMER, DALL, JUKES-BROWNE and WOODRING.

1. *Pitar limatula* (Sowerby).

1851. *Cytherea limatula* Sowerby, Thes. Conch. II, p. 640, pl. CXXXVI, figs. 200, 201.
1853. *Dione limatula* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc., p. 60.
1857. *Callista limatula* Adams, H. & A., Gen. Rec. Moll., II, p. 426.
1860. *Cytherea limatula* Reeve, Elem. Conch., II, p. 108.
1862. *Cytherea* (*Caryatis*) *limatula* Römer, Malakozool. Blätt., IX, p. 70.
1869. *Venus* (*Cytherea-Caryatis*) *limatula* Römer, Mon. *Venus*, I, p. 98, pl. XXVI, figs. 3, 3 *a—e*.
1869. *Cytherea limatula* Pfeiffer, in Martini-Chemn. Conch. Cab. (N. F.), XI (1), *Veneracea*, p. 58, pl. XXII, fig. 5.
1882. *Callista limatula* Dunker, Ind. Moll. Mar. Japon., p. 200.
1884. *Cytheraea* (sic) *limatula* Grasset, Ind. Test. Viv., p. 265.
1890. *Caryatis limatula* Paetel, Cat. Conch. Samm., III, p. 71.

I refer, with some hesitation, a single, young, right valve to *Pitar limatula*. This valve agrees in general form and sculpture with the types of the species in the British Museum (Nat. Hist.), London.

Distribution: — The type-series of *P. limatula* is without any locality, but DUNKER recorded the species from Japan and Amboina.

The "Siboga" shell was collected in the Bay of Bima (St. 47).

2. *Pitar manillae* (Sowerby).

1851. *Cytherea Manillae* Sowerby, Thes. Conch., II, p. 634, pl. CXXXVI, figs. 180, 181.
1853. *Dione Manillae* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc., p. 75.
1857. *Callista Manillae* Adams, H. & A., Gen. Rec. Moll., II, p. 426.
1860. *Cytherea Manillae* Reeve, Elem. Conch., II, p. 108.
1862. *Cytherea Manillae* Römer, Malakozool. Blätt., IX, p. 66.
1863. *Circe Manillae* Reeve, Conch. Icon., XIV, *Circe*, pl. IX, fig. 37.
1867. *Venus* (*Cytherea-Caryatis*) *Manillae* Römer, Mon. Venus, I, p. 90, pl. XXIV, figs. 2, 2*a*, *b*.
1884. *Cytheraea* (sic) *Manillae* Grasset, Ind. Test. Viv., p. 265.
1890. *Caryatis Manillae* Paetel, Cat. Conch. Samm., III, p. 71.
1896. *Caryatis Manillae* Casto de Elera, Cat. Sist. Filip., p. 742.
1903. *Caryatis Manillae* Hidalgo, Obras Malacol., II, p. 207.
1928. *Meretrix* (*Pitar*) *manillae* Faustino, Summary Philippine Mar. Freshw. Moll., p. 75.

RÖMER remarked that the young shells of *P. manillae* are not so pointed posteriorly as is shown in Sowerby's figures. I have compared the fairly large series of shells of this species collected by the "Siboga" Expedition with the type-series in the British Museum (Nat. Hist.), London, and find that the young shells are more regular in outline; they are generally less trigonal and less rostrated than the adults. In the younger stages tbe shell is thinner and the sculpture is not so deeply impressed.

Sowerby's[1] record of *P. manillae* from South Africa is, as I found on examination of his specimens, based on incorrect determination.

Distribution: — *Pitar manillae* has so far been recorded from the Philippine waters.

The "Siboga" shells of the species were dredged in the Madura Strait (St. 2), the Anchorage off Djangkar, Java (St. 4), Bay of Bima (St. 47), Bay of Badjo, west coast of Flores (St. 50) and at Maccassar (St. 71).

3. *Pitar affinis* (Gmelin).

1782. *Venus laeta*, etc. Chemnitz (nec Linnaeus), Conch. Cab., VI, p. 354, pl. XXXIV, figs. 353, 354.
1788. *Venus laeta* Schröter (nec Linnaeus), Conch. Cab. Namen Reg., p. 112.
1790. *Venus affinis* Gmelin, Syst. Nat. (ed. XIII), p. 3278.
1797. Bruguière, Encycloped. Méthod., pl. CCLXVI, figs. 4*a*, *b*.
1818. *Cytherea laeta* Lamarck (nec Linnaeus), Anim. sans Vertèb., V, p. 567.
1825. *Venus laeta* Blainville (nec Linnaeus), Man. Malacol., p. 556, pl. LXXIV, fig. 1.
1830. *Cytherea laeta* Deshayes (nec Linnaeus), Encycloped. Méthod., II, p, 56.
1835. *Cytherea laeta* Deshayes (nec Linnaeus) in Lamarck, Anim. sans Vertèb., VI, p. 307.
1846. *Cytherea laeta* Chenu (nec Linnaeus), Illustr. Conchyliol., *Cytherea*, pl. XIV, figs. 3, 3*a*, *b*.
1851. *Cytherea laeta* (nec Linnaeus) and *C. inflata* Sowerby, Thes. Conch., II, p. 636, pl. CXXXIII, figs. 123, 124; p. 637, pl. CXXXIII, fig. 127.
1853. *Dione laeta* Deshayes (nec Linnaeus), Cat. Conch. Brit. Mus., I, *Veneridae*, etc., p. 64.
1853. *Lioconcha affinis* Mörch, Cat. Yoldi, II, p. 27.
1856. *Venus laeta* Hanley (nec Linnaeus) in Wood, Ind. Test., p. 46, pl. VII, fig. 49.
1857. *Callista affinis* Adams, H. & A., Gen. Rec. Moll., II, p. 425.
1862. *Cytherea affinis* Römer, Malakozool. Blätt., IX, p. 73.
1863. *Dione laeta* Reeve (nec Linnaeus), Conch. Icon., XIV, *Dione*, pl. IX, figs. 35*a*, *b*.
1867. *Venus* (*Cytherea-Caryatis*) *affinis* Römer, Mon. Venus, I, p. 105, pl. XXVIII, figs. 3, 3*a—c*; pl. XXXIII, figs. 6, 7.
1868. *Cytherea affinis* Pfeiffer in Martini-Chemn., Conch. Cab. (N. F.), XI (1), *Veneracea*, p. 24, pl. V, figs. 1, 2.
1880. *Cytherea* (*Caryatis*) *laeta* von Martens, (nec Linnaeus), Möbius Beiträge Meeresf. Mauritius, Seychell., p. 325.
1884. *Cytheraea* (sic) *affinis* Grasset, Ind. Test. Viv., p. 263.
1890. *Caryatis affinis* Paetel, Cat. Conch. Samm., III, p. 70.
1895. *Caryatis inflata* Melvill & Standen, Journ. Conch., VIII, p. 129.
1896. *Caryatis affinis* Casto de Elera, Cat. Sist. Filip., p. 741.
1903. *Caryatis affinis* Hidalgo, Obras Malacol., II, p. 201.
1905. *Caryatis affinis* Hidalgo, Cat. Filip., p. 326.
1909. *Caryatis laeta* Melvill (nec Linnaeus), Trans. Linn. Soc. London (Zool.), XIII, p. 132.
1911. *Meretrix* (*Caryatis*) *affinis* and var. *inflata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVII, p. 132.
1911. *Venus* (*Caryatis*) *affinis* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 52.
1928. *Meretrix* (*Pitar*) *affinis* Faustino, Summary Philippine Mar. Freshw. Moll., p. 75.
1929. *Meretrix* (*Pitar*) *affinis* Dautzenberg, Faun. Colon. Français., III, p. 596.

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[1] Sowerby, G. B. — Mar. Shells S. Africa, Supplement, p. 24 (1897).

The shell figured by Reeve[1]) as *Dione pellucida* (Lamarck) is also a specimen of *Pitar affinis*, but I am not sure wether the Lamarckian species[2]) was correctly interpreted by Reeve.

P. affinis is closely allied to *P. obliquata* (Hanley[3])), but the shell of the latter is much thicker, heavier, more strongly inflated, very oblique, with the umbones lying almost near the anterior end and the posterior margin much more strongly arched.

Distribution: — *P. affinis* is widely distributed in the Indo-Pacific Region.

The "Siboga" Expedition collected only young shells of the species in the Bay of Bima (St. 47), Haingsisi, Samau Island, Timor (St. 60), Buka or Cyrus Bay, south coast of Rotti Island (St. 299) and the Anchorage east of Dangar Besar, Saleh Bay (St. 313).

Genus **Circe** Schumacher.

1817. *Circe* Schumacher, Essai Nouv. Syst., p. 152.
1838. *Circe* Gray, Analyst, VIII, p. 307.
1853. *Circe* Römer, Krit. Untersuch., p. 15.
1857. *Circe* Adams, H. & A., Gen. Rec. Moll., II, p. 428.
1864. *Circe* Reeve, Conch. Icon., XIV, *Circe*, pl. I (explanation).
1869. *Circe* Römer, Mon. Venus, I, p. 192.
1887. *Circe* Fischer, P., Man. Conchyliol., p. 1080.
1902. *Circe* Dall, Proc. U. S. Nat. Mus., XXVI, p. 351.
1903. *Circe* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1250.
1914. *Circe* Jukes-Browne, Proc. Malacol. Soc. London, XI, p. 66.

I consider *Circe* Schumacher to be of the same rank as *Gafrarium* Röding. The genotype of *Circe* is *Circe scripta* (Linn.).

1. *Circe scripta* (Linn.).

1741. *Chama litterata rotunda* Rumph, Amboin. Rarit., p. 140, pl. XLIV, fig. C,
1742. *Chama Optica Rumphi* d'Argenville, Hist. Nat., pp. 320, 325, pl. XXIV, fig. M.
1742. *Concha marina*, etc., Gualtieri, Ind. Test., pl. LXXVII, fig. C.
1758. *Venus scripta* Linnaeus, Syst. Nat., (ed. X), p. 689.
1764. *Venus scripta* Linnaeus, Mus. Lud. Ulr., p. 507.
1767. *Venus scripta* Linnaeus, Syst. Nat., (ed. XII), p. 1135.
1771. *L'Ecriture arabique batarde* Knorr, Délices Yeux, V, p. 26, pl. XV, fig. 3.
1784. *Venus scripta Linnaei*, Chemnitz, Conch. Cab., VII, p. 31, pl. XL, figs. 420—426.
1788. *Venus scripta* Schröter, Conch.-Cab. Namen Reg., p. 112.
1790. *Venus scripta* Gmelin, Syst. Nat., (ed. XIII), p. 3286.
1797. Bruguière, Encyclopéd. Méthod., pl. CCLXXIV, fig. 1.
1797. *Pectunculus scriptus* Humphrey, Mus. Calonnianum, p. 48.
1798. *Cytherea scripta* Röding, Mus. Boltenianum, p. 178.
1802. *Venus scripta* Bosc, Hist. Nat. Coq., III, p. 68.
1817. *Venus scripta* Dillwyn, Descr. Cat., I, 201.
1817. *Circe violacea* Schumacher, Essai Nouv. Syst., p. 152, pl. XV, figs. 3*a*, *b*.
1818. *Cytherea scripta* and *C. undatina* Lamarck, Anim. sans Vertèb., V, p. 575,
1824. *Cytheria* (sic) *undatina* and *C. scripta* Dubois, Epitome, pp. 70, 71.
1825. *Cytherea scripta* Sowerby, Cat. Tankerville, p. 13.
1830. *Cytherea scripta* Deshayes, Encyclopéd. Méthod., II, p. 58.
1835. *Cytherea scripta* and *C. undatina* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 320.

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1) Reeve, L. — Conch. Icon., XIV, *Dione*, pl. XI, fig. 48 (1863).
2) Lamarck, J. B. — Anim. sans Vertèb., V, p. 571 (1818).
3) Hanley, S. — Proc. Zool. Soc. London, p. 109 (1844).

1838. *Cytherea scripta* Gray, Analyst, VIII, p. 307.
1843. *Cytherea scripta* Hanley, Rec. Biv. Shells, p. 102.
1845. *Cytherea scripta* Catlow & Reeve, Conch. Nomencl., p. 40.
1847. *Cytherea Scripta* Chenu, Illustr. Conchyliol., *Cytherea*, pl. XI, figs. 4*a*—*c*, 5*a*—*c*, 6*a*—*c*, 7*a*—*c*, 8*a*—*c*.
1847. *Circc scripta* Gray, Proc. Zool. Soc. London, p. 183.
1851. *Circe undatina* and *C. scripta* Sowerby, Thes. Conch., II, p. 651, pl. XXXVIII, figs. 22—26; 38—40; 42, 43.
1853. *Circe scripta* Mörch, Cat. Yoldi, II, p. 25.
1853. *Circe scripta*, *C. personata* and *C. albida* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., pp. 83, 84.
1853. *Circe personata* Deshayes, Proc. Zool. Soc. London, p. 6.
1855. *Venus scripta* Hanley, Ipsa Linn. Conch., p. 78.
1856. *Venus scripta* Hanley in Wood, Ind. Test., p. 50, pl. VIII, fig. 97.
1857. *Venus* (*Cytherea-Circe*) *scripta* and *V.* (*C.-C.*) *undatina* Römer, Krit. Untersuch., pp. 97, 98.
1857. *Circe personata* and *C. scripta* Adams, H. & A., Gen. Rec. Moll., II, p. 429, pl. CVIII, figs. 4, 4*a*.
1860. *Cytherea scripta* and *C. undatina* Reeve, Elem. Conch., II, pp. 108, 109.
1863. *Venus* (*Cytherea-Circe*) *scripta*, *V.* (*C.-C.*) *personata* and *V.* (*C.-C.*) *undatina* Römer, Malakozool. Blätt., X, pp. 2, 3, 7.
1864. *Circe scripta*, *C. fulgurata*, *C. personata* and *C. sugillata* (non Jonas), Reeve, Conch. Icon., XIV, *Circe*, pl. I, figs. 1*a*—*c*; pl. II, figs. 5, 6*a*—*c*; pl. III, fig. 11.
1865. *Cytherea scripta* Vaillant, Journ. Conchyliol., XIII, p. 118.
1867. *Circe scripta* Mitchell, Cat. Mus. Madras, p. 65.
1867. *Circe undatina* Angas, Proc. Zool. Soc. London, p. 922.
1868. *Cytherea scripta*, *C. subquadrata* and *C. personata* Pfeiffer in Martini-Chemn., Conch. Cab. (N. F.), XI, (1), *Veneracea*, p. 54, pl. XX, figs. 1—4; p. 55, pl. XX, figs. 5—7.
1869. *Circe undatina* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 882.
1869. *Venus scripta* Dunker, Cat. Mus. Godeffroy, IV, p. 111.
1869. *Venus scripta* von Martens, von der Deckens Reise, p. 66.
1869. *Venus scripta* Issel, Malacol. Mar. Rosso, pp. 71, 251.
1869. *Venus* (*Cytherea-Circe*) *scripta*, *V.* (*C.-C.*) *personata* and *V.* (*C.-C.*) *undatina* Römer, Mon. Venus, I, p. 193, pl. LII, figs. 1, 1*a*—*c*; p. 195, pl. LIV, figs. 1, 1*a*—*c*; p. 199, pl. LIV, figs. 2, 2*a*, *b*.
1869. *Circe scripta* Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 232.
1871. *Circe undatina* Lischke, Japan. Meeresconch., II, p. 172.
1874. *Circe undatina* Lischke, Japan. Meeresconch., III, p. 87.
1876. *Ciroe scripta* Tapparone-Canefri, Viag. "Magenta", p. 236.
1878. *Cytherea* (*Circe*) *scripta* Kobelt, Illustr. Conchylienbuch, p. 335, pl. XCVIII, fig. 7.
1880. *Circe scripta* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 325.
1881. *Circe personata* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 14.
1882. *Circe scripta* Dunker, Ind. Moll. Mar. Japon., p. 201.
1884. *Cytheraea fulgurata* and *C. scripta* Grasset, Ind. Test. Viv., pp. 264, 266.
1885. *Circe scripta* Smith, "Challenger" Lamellibranchia, p. 141.
1887. *Circe scripta* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 210.
1889. *Circe scripta* Morlet, Journ. Cochyliol., XXXVII, p. 169.
1890. *Circe scripta* Vassel, Bull. Soc. Hist. Nat. d'Autun, III, p. 26.
1890. *Circe personata*, *C. scripta* and *C. undatina* Paetel, Cat. Conch. Samm., III, p. 76.
1891. *Circe personata* and *C. scripta* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 231
1891. *Circe scripta* Smith, Proc. Zool. Soc. London, p. 424.
1895. *Circe scripta* Pilsbry, Cat. Mar. Moll. Japan, p. 128.
1896. *Circe scripta* Casto de Elera, Cat. Sist. Filip., p. 747.
1898. *Circe personata* Melvill and Standen, Journ. Conch., IX, p. 83.
1901. *Circe scripta* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 280.
1902. *Circe scripta* and var. *fulgurata* Shopland, Proc. Malacol Soc. London, V, p. 178.

1903. *Circe undatina* and *C. scripta* Hidalgo, Obras Malacol., II, pp. 123, 124.
1905. *Circe undatina* and *C. scripta* Hidalgo, Cat. Filip., p. 330.
1906. *Circe scripta* and var. *fulgurata* Melvill & Standen, Proc. Zool. Soc. London, p. 831.
1906. *Circe scripta* Owston, Japan. Loochooan Shells, p. 39.
1906. *Gafrarium scriptum* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1906. *Circe scripta* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 292.
1909. *Circe scripta* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 131.
1909. *Circe scripta* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 468.
1909. *Circe scripta* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 230.
1910. *Gafrarium scriptum* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1911. *Circe scripta* Pelseneer, "Siboga" Lamellibranches (Anat.), pl. XIX, fig. 3.
1928. *Circe scripta* Faustino, Summary Philippine Mar. Freshw. Moll., p. 78.
1929. *Circe scripta* Dautzenberg, Faun. Colon. Français., III, p. 598.
1930. *Circe scripta* Cox, Mon. Geol. Dept. Hunterian Mus. Glasgow Univ., N⁰ 4, p. 156.

The opinions of the different authorities in reference to the Linnaean species *Venus scripta* are very confused. The shells of this species vary a great deal in outline, sculpture and colouration, and have been described as several distinct species. The Linnaean descriptions and the figures cited by the author do not agree regarding the outline of the shell and it is almost impossible to be definite about the species as understood by LINNAEUS. HANLEY's work on the Linnaean Cabinet also unfortunately does not help in the unravelling of this tangle. In any case, as the species is so variable, and no constant differences can be determined, it is best to combine the various species.

The species has a subcircular to even quadrate shell with the umbones lying in front of the middle. It is greatly compressed posteriorly and is not very inflated. The posterior margin may be rounded or distinctly angulate. The sculpture consists of closely placed moderately thick or strong and prominent concentric ridges. The colouration may be a uniform yellow or more often painted with a large number of zigzag V-shaped brownish markings; the lunule and area are often dark brown and on some shells there are two broad brown bands radiating from the umbones down to the ventral margin.

In addition to the species included in the synonymy given above, *Circe albida* Deshayes [1]), *C. fulgurata* Reeve [2]), *C. sugillata* Reeve [3]) (non Jonas) and *C. trigona* [4]) are also to be considered as synonyms or at the most varieties of *C. scripta*. *C. oblonga* Deshayes [5]) has a more oblong shell of a uniform yellowish colour and probably with more extensive material would also be included in the synonymy of this variable species.

Distribution: — *C. scripta* has a very wide range in the Indo-Pacific Region, and has also been recorded from the Red Sea and the Persian Gulf.

In the "Siboga" collection there are shells of this species from the Anchorage off Djangkar, Java (St. 4), Bay of Pidjot, Lombok (St. 33), Saleyer (St. 213), Tual Anchorage, Kei Islands (St. 258), Dobo Reef, Aru Islands (St. 272) and the Anchorage east of Dangar Besar, Saleh Bay (St. 313).

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1) DESHAYES, G. P. — Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 84 (1853).
2) REEVE, L. — Conch. Icon., XIV, *Circe*, pl. II, fig. 5 (1863).
3) REEVE, L. — Op. cit., pl. III, fig. 11 (1863).
4) REEVE, L. — Op. cit., pl. III, fig. 12 (1863).
5) DESHAYES, G. P. — Op. cit., p. 86 (1853).

2. *Circe sulcata* Gray.

1838. *Circe sulcata* Gray, Analyst, VIII, p. 307.
1843. *Cytherea Sulcata* Hanley, Rec. Biv. Shells, p. 103.
1844. *Cytherea plebia* Hanley, Proc. Zool. Soc. London, p. 109.
1845. *Cytherea erythraea* Jonas, Zeitschr. Malakozool., II, p. 65.
1845. *Cytherea sulcata* Catlow & Reeve, Conch. Nomencl., p. 40.
1851. *Cytherea erythraea* Philippi, Abbild. Beschreib. Conch., III, p. 71, *Cytherea*, pl. IX, fig 2.
1852. *Circe plebia* Sowerby, Thes. Conch., II, p. 653, pl. CXXXVIII, figs. 33—37.
1853. *Circe Artemis* and *C. Sulcata* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 86.
1853. *Circe Metcalfei* Deshayes, Proc. Zool. Soc. London, p. 7.
1856. *Cytherea plebia* Hanley, Rec. Biv. Shells, p. 356, pl. XV, fig. 37.
1857. *Cytherea plebia* Adams H. & A., Gen. Rec. Moll., II, p. 429.
1860. *Cytherea plebia* Reeve, Elem. Conch., II, p. 108.
1860. *Cytherea* (*Circe*) *paeta* Römer, Malakozool. Blätt., VI, p. 155.
1863. *Cytherea* (*Circe*) *paeta*, *C.* (*C.*) *sulcata*, *C.* (*C.*) *plebia*, *C.* (*C.*) *Artemis*, and *C.* (*C.*) *erythrea* Römer, Malakozool. Blätt., X, p. 11.
1863. *Circe Artemis*, *C. Sulcata*, and *C. plebia* Reeve, Conch. Icon., XIV, *Circe*, pl. IV, figs. 15, 16*a*—*c*, 17.
1869. *Venus* (*Cytherea—Circe*) *sulcata* Römer, Mon. Venus, I, p. 210, pl. LVII, figs. 2, 2*a*—*f*.
1869. *Cytherea paeta*, Pfeiffer in Martini-Chemn., Conch.-Cab. (N.F.), XI, (I), *Veneracea*, p. 59, pl. XXII, figs. 6, 7.
1869. *Cytherea* (*Lioconcha*) *sulcata* Issel, Malacol. Mar. Rosso, p. 67.
1870. *Circe sulcata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1874. *Cytherea sulcata* Grasset, Ind. Test. Viv., p. 266.
1885. *Circe sulcata* Smith, "Challenger" Lamellibranchia., p. 142.
1886. *Circe snlcata* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 100,
1887. *Circe sulcata* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 211.
1890. *Circe sulcata* Paetel, Cat. Conch. Samm., III, p. 76.
1896. *Circe sulcata* Casto de Elera, Cat. Sist. Filip., 747.
1901. *Circe sulcata* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 280.
1903. *Circe sulcata* Hidalgo, Obras Malacol., II, p. 227.
1905. *Circe sulcata* Hidalgo, Cat. Filip., p. 330.
1906. *Circe sulcata* Melvill & Standen, Proc. Zool. Soc. London, p. 831.
1909. *Circe sulcata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 230.
1911. *Circe sulcata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 50.
1928. *Circe sulcata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 78.

As Smith and Lynge have shown *Circe plebia* (Hanley) [1], *C. erythraea* (Jonas), *C. artemis* (Deshayes), *C. metcalfei* (Deshayes) and *C. paeta* Römer [2]) are all synonyms of *C. sulcata*. Hanley's species *C. plebia* from the Philippines, as I found on examination of the type-shell, is based on a full-grown shell; at this stage the shell appears more quadrate, with the postero-dorsal border more straight, posterior margin more truncate and the ventral margin more arcuate.

The shells of *C. sulcata*, as was noticed by Lynge, exhibit a great variety of colour markings.

Distribution: — *Circe sulcata* has been recorded from the Red Sea, the Persian Gulf, Mergui Archipelago, Gulf of Siam, Java, the Philippines and Viti Island.

In the "Siboga" collection there are shells of this species from the Bay of Pidjot, Lombok (St. 33), the Anchorage north of Ubian (St. 99), and the Anchorage east of Dangar Besar, Saleh Bay (St. 313).

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1) Lynge wrongly spells this species as *Cytherea plebja*.

2) In Smith's work the specific name of the species is wrongly spelt as *pacta*.

3. *Circe lirata* Römer.

1869. *Circe lirata* Römer, Mon. Venus, p. 208, pl. LIX, fig. 2.
1909. *Circe lirata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 231, figs. 28—31.

The shells of this beautiful species, as was remarked by Lynge, vary a great deal in reference to their colour. The general background is of a white or cream colour with a large number of elongated radial blotches scattered all over the surface; in some cases two broad bands radiata from the umbones to the ventral margin, while a few uniformly white shells are also to be found in large series. On young shells and on the umbonal region of the unworn old shells the outwardly radiating transverse ridges, in some cases appearing as inverted V-shaped ridges, are distinctly marked; these are well shown in Römer's and Lynge's figures, and are what Römer described as „grobe Querfalten, die aus zwei in der Mitte zusammenstossenden Bogen bestehen und nach aussen dicker werden".

I can not agree with Lynge that *Gafrarium navigatum* Hedley [1]) is synonymous with this species, as the form, sculpture and the hinge of the two species are quite different.

Distribution: — *Circe lirata* was described from the China Sea, and has since been recorded from the Gulf of Siam. In the British Museum (Nat. Hist.), London, there is also a shell of the species from Mindanao, Philippines.

In the "Siboga" collection the species is represented by a young shell collected at the Anchorage off the South Point of Kabaëna Island (St. 209), a single valve taken in the Bay of Pidjot, Lombok (St. 33) and an adult shell at the Anchorage off North Ubian (St. 99).

4. *Circe nana* Melvill. (Plate VI, figs. 13, 14).

1898. *Circe nana* Melvill, Mem. Proc. Manchester Lit. Phil. Soc., XLII, pt. II, p. 31, pl. II, fig. 9.
1906. *Circe nana* Melvill & Standen, Proc. Zool. Soc. London, p. 831.
1909. *Circe nana* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 231.

The type-shell of *Circe nana* is greatly weathered and does not show the beautiful sculpture of the species. In fresh, young shells the sculpture, as was noted by Lynge, consists of a large number of ridges radiating outwards to the margins in a fan-shaped manner. There are, in addition, a large number of close-set concentric striae, and as a result of the crossing of the numerous radial and concentric striae the surface of the valves becomes ornamented with a very large number of rounded to ovoidal tubercles. On the older parts of the valves, particularly in the middle, the concentric ridges alone are prominent, but traces of the radial ridges are to be distinguished as slight indentations on both sides of the concentric ridges. I figure a young shell.

Distribution: — *Circe nana* was described from the Indian Ocean (Long. 26° 10′ N., Lat. 52° 50′ E.), and has since been recorded from the Persian Gulf and the Gulf of Siam.

In the "Siboga" collection there are a number of young and an adult shell of the species dredged at the Anchorage south coast of Timor (St. 285; 34 metres).

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[1]) Hedley, C. — Proc. Linn. Soc. N. S. Wales, XXXI, p. 476, pl. XXXVIII, fig. 33 (1906).

Genus **Gafrarium** Röding.

1798. *Gafrarium* Röding, Mus. Boltenianum, p. 176.
1815. *Paphia* Oken (nec Röding, non Lamarck), Lehrbuch Naturges., p. XII.
1857. *Crista* Römer, Krit. Untersuch., p. 15.
1869. *Crista* Römer, Mon. Venus, I, p. 173.
1887. *Crista* Fischer, P., Man. Conchyliol., p. 1080.
1902. *Gafrarium* Dall, Proc. U. S. Nat. Mus., XXVI, p. 351.
1903. *Gafrarium* Dall, Trans. Wagner Free Inst. Sci. Philadephia, III, p. 1246.
1914. *Crista* Jukes-Browne, Proc. Malacol. Soc. London, XI, p. 67.
1925. *Gafrarium* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods; etc., p. 149.

I am unable to agree with Jukes-Browne that *Crista-Gafrarium* is a subgenus of *Circe* Schumacher, as the two are sufficiently distinct to be considered one as the subgenus of the other. Good definitions of *Gafrarium* have been published by Römer, Dall, Jukes-Browne and Woodring. The genotype is *Gafrarium pectinatum* (Linnaeus).

1. *Gafrarium pectinatum* (Linn.).

1758. *Venus pectinata* Linnaeus. Syst. Nat. (ed. X), p. 689.
1764. *Venus pectinata* Linnaeus, Mus. Lud. Ulr., p. 507.
1767. *Venus pectinata* Linnaeus, Syst. Nat. (ed. XII), p. 1135.
1780. *Venus pectinata* Born, Test. Mus. Caes. Vindobon., p. 74.
1780. *Came* Favanne, La Conch., pl. XLVI, fig. E, 1.
1784. *Venus pectinata Linnaei* Chemnitz, Conch. Cab., VII, p. 28, pl. XXXIX, figs. 418, 419.
1788. *Venus pectinata* Schröter, Conch. Cab. Namen Reg., p. 112.
1790. *Venus pectinata* Gmelin, Syst. Nat. (ed. XIII), p. 3285.
1798. *Gafrarium pectinatum* Röding, Mus. Boltenianum, p. 177.
1802. *Venus pectinata* Bosc, Hist. Nat. Coq., III, p. 62.
1817. Savigny, Descr. Egypt., pl. VIII, figs. 17, 1—3.
1817. *Venus discors* (nec Gmelin), Descr. Cat., I, p. 199.
1818. *Cytherea pectinata* Lamarck, Anim. sans Vertèb., V, p. 577.
1824. *Cytheria* (sic) *pectinata* Dubois, Epitome, p. 71.
1825. *Venus pectinata* Blainville, Man. Malacol., p. 556, pl. LXXIV, fig. 4.
1825. *Cytherea pectinata* Sowerby, Cat. Tankerville, p. 13.
1827. *Cytherea pectinata* Audouin, Explicat. pl. Savigny in Descr. Egypt., p. 199.
1830. *Gytherea pectinata* Deshayes, Encyclopéd. Méthod., II, p, 59.
1835. *Cytherea pectinata* var. *immaculata* Sowerby, Proc. Zool. Soc. London, p. 47.
1835. *Cytherea pectinata* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 322.
1837. *Venus pectinata* Cuvier, Anim. Kingdom, pl. XXXVII, fig. 3.
1838. *Circe pectinata* Gray, Analyst, VIII, p. 307.
1841. *Cytherea pectinata* Sganzin, Cat. Coq. Ile France, p. 7.
1843. *Cytherea Pectinata* Hanley, Rec. Biv. Shells, p. 107.
1844. *Cytherea pectinata* Potiez & Michaud, Gal. Douai, II, p. 229.
1845. *Cytherea pectinata* Catlow & Reeve, Conch. Nomencl., p. 39.
1846. *Cytherea Savignyi* Jonas, Zeitschr. Malakozool., III, p. 65.
1847. *Cytherea pectinata* Chenu, Illustr. Conchyliol., *Cytherea*, pl. XII, figs. 5, 5*a*, *b*.
1848. *Cytherea Savignyi* Krauss, Südafr. Moll., p. 9.
1851. *Circe pectinata* Sowerby, Thes. Conch., II, p. 649, pl. CXXXVII, figs. 1—3.
1853. *Circe pectinata* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 90.
1853. *Circe pectinata* and *C. Savignyi* Mörch, Cat. Yoldi, II, pp. 25, 26.
1855. *Circe pectinata* Berge, Conchylienbuch, p. 55, pl. V, fig. 4.
1855. *Venus pectinata* Hanley, Ipsa Linn. Conch., p. 77.
1856. *Venus discors* Hanley (nec Gmelin), in Wood Ind. Test., p. 49, pl. VIII, fig. 91.

1857. *Venus* (*Cytherea-Crista*) *pectinata* Römer, Krit. Untersuch., pp. 15, 94.
1857. *Circe pectinata* Adams, H. & A., Gen. Rec. Moll., II, p. 429.
1858. *Circe pectinata* Fischer, P., Journ. Conchyliol., VII, p. 337.
1860. *Cytherea pectinata* Reeve, Elem. Conch., II, p. 108.
1863. *Venus* (*Cytherea-Crista*) *pectinata* Römer, Malakozool. Blätt., IX, p. 16.
1863. *Circe pectinata* Reeve (ex parte), Conch. Icon., XIV, *Circe*, pl. V, fig. 20, *b*.
1865. *Cytherea pectinata* Vaillant, Journ. Conchyliol., XIII, p. 119.
1867. *Circe pectinata* Mitchell, Cat. Mus. Madras, p. 65.
1868. *Cytherea pectinata* Pfeiffer in Martini-Chemn., Conch. Cab. (N. F.), XI (1), *Veneracea*, p. 50, pl. XVIII, figs. 10, 11.
1869. *Circe* (*Crista*) *pectinata* Dunker, Cat. Mus. Godeffroy, IV, p. 111.
1869. *Cytherea* (*Crista*) *Savignyi* Issel, Malacol. Mar. Rosso, p. 70.
1869. *Venus* (*Cytherea-Crista*) *pectinata* Römer, Mon. Venus, I, p. 174, pl. XLVII, figs. 1, 1*a—d*.
1870. *Circe Savignyi* Mac Andrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1870. *Circe pectinata* Fischer, P., Journ. Conchyliol., XVIII, p. 371.
1877. *Circe pectinata* de Man, Réch. Faun. Madagascar, V (3), Mollusques, p. 6.
1878. *Venus pectinata* Liénard, Cat. Ile Maurice, p. 63.
1878. *Cytherea* (*Crista*) *pectinata* Kobelt, Illustr. Conchylienbuch, p. 335, pl. XCVIII, fig. 6.
1879. *Circe pectinata* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 743.
1879. *Circe pectinata* Smith, Phil. Trans. Roy. Soc. London, LI, p. 476.
1880. *Circe* (*Crista*) *pectinata* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 325.
1881. *Sunetta pectinata* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 15.
1884. *Cytherea* (*Crista*) *pectinata* Tryon, Struct. Syst. Conch., III, p. 179, pl. CXIII, figs. 26, 27.
1884. *Cytheraea* (sic) *pectinata* Grasset, Ind. Test. Viv., p. 265.
1884. *Circe pectinata* Smith, Rept. Voy. „Alert”, p. 96.
1886. *Circe Savignyi* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 100.
1886. *Circe pecticata* (sic) Jousseaume, Mém. Soc. Zool. France, I, p. 208.
1890. *Circe pectinata* Vassel, Bull. Soc. Hist. Nat. d'Autun, III, pp. 14, 17, 18.
1890. *Circe pectinata* and vars. *sagaressa Savignyi* and *virgona* Paetel, Cat. Conch. Samm., III, p. 75.
1891. *Circe* (*Crista*) *pectinata* Smith, Proc. Zool. Soc. London, p. 424.
1891. *Circe* (*Crista*) *pectinata* Böttger, Ber. Senckenberg. Naturf. Ges. p. 252.
1891. *Circe* (*Crista*) *pectinata* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 231.
1892. *Circe* (*Crista*) *pectinata* Sowerby, Mar. Shells S. Africa, p. 59.
1892. *Cytherea* (*Crista*) *pectinata* Böttger, Nachrichtsbl. Deutsch. Malakozool. Ges., XXIV, p. 168.
1893. *Circe* (*Crista*) *pectinata* Dautzenberg, Bull. Soc. Zool. France, XVIII, p. 84.
1896. *Crista pectinata* Casto de Elera, Cat. Sist. Filip., p. 745.
1898. *Crista pectinata* Melvill & Standen, Journ. Conch., IX, p. 83.
1899. *Circe pectinata* Hedley, Mem. Austral. Mus., III, pp. 501, 529.
1899. *Circe pectinata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 194.
1900. *Circe* (*Crista*) *pectinata* Newton, Geol. Mag., VII, p. 555, pl. XXI, fig. 3.
1901. *Crista pectinata* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 280.
1902. *Crista pectinata* Shopland, Proc. Malacol. Soc. London, V, p. 177.
1903. *Circe pectinata* Hidalgo, Obras Malacol., II, p. 228.
1904. *Circe pectinata* Smith, Journ. Malacol., II, p. 228.
1905. *Circe pectinata* Tillier & Bavay, Bull. Soc. Zool. France, XXX, p. 177.
1905. *Crista pectinata* Hidalgo, Cat. Filip., p. 331.
1906. *Crista pectinata* Melvill & Standen, Proc. Zool. Soc. London, p. 831.
1906. *Circe pectinata* Owston, Japan. Loochooan Shells, p. 39.
1906. *Crista pectinata* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 293.
1909. *Circe* (*Crista*) *pectinata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 211.
1909. *Circc* (*Crista*) *pectinata* Lamy, Mém. Soc. Zool. France, XXII, p. 346.
1909. *Circe* (*Crista*) *pectinata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 234.
1909. *Crista pectinata* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 132.
1910. *Gafrarium pectinatum* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.

1912. *Circe pectinata* Pallary, Mém. Inst. Egypt., VII, p. 166, pl. XVII, fig. 5.
1919. *Gaffrarium* (sic) *pectinatum* Odhner, Arkiv Zool., XII, N⁰. 16, p. 12.
1925. *Gafrarium* (*Gafrarium*) *pectinatum* Oostingh (ex parte), Geol. Comm. Agr. Univ. Wageningen, N⁰. 9, p. 296.
1926. *Crista Savignyi* Pallary, Mém. Inst. Egypt., XI, p. 105, pl. XII, figs. 17. 1—3.
1927. *Gafrarium pectinatum* Tomlin, Trans. Zool. Soc. London, XXVI, p. 306.
1928. *Circe pectinata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 77.
1929. *Crista pectinata* Dautzenberg, Faun. Colon. Français., III, p. 599.

Reeve's figures 20*a* and *c* in "Conch. Icon." are of the shells of the allied species *Gafrarium tumidum* (Röding) and not of *G. pectinatum*. Good figures of the species were, however, published by Römer and Pfeiffer, these authors also discussed at length the distinguishing characters of these two closely allied species.

The "Siboga" shells of *G. pectinatum* resemble more shells from the Torres Straits, and differ from the Red Sea shells in having a slightly coarser sculpture. In large series of shells from various localities the differences in the sculpture are bridged over, and it is difficult to distinguish any varieties or local races.

Distribution: — *Gafrarium pectinatum* is a wide-spread species in the Indo-Pacific Region, and has also been recorded from the Red Sea and the Persian Gulf.

In the "Siboga" collection it is represented by shells from the Anchorage off Kawio and Kamboling Islands, Karkaralong Group (St. 129) and Sanana Bay, east coast of Sula Besi (St. 193).

2. *Gafrarium dispar* (Dillwyn).

1795. *Venus dispar* Chemnitz, Conch.-Cab., XI, p. 230, pl. CCIII, figs. 1981, 1982.
1797. Bruguière, Encyclopéd. Méthod., pl. CCLXXI, figs, 2*a*, *b*.
1817. *Venus dispar* and *V. discors* Dillwyn, Descr. Cat., I, 199.
1818. *Venus muscaria*, *V. pulicaris*, *V. mixta*, and *V. cuneata* Lamarck, Anim. sans Vertèb., V, pp. 576, 578.
1824. *Cytheria* (*sic*) *muscaria*, *C. pulicaris*, and *C. mixta*, Dubois Epitome, p. 71.
1835. *Venus muscaria*, *V. pulicaris*, *V. mixta* and *V. cuneata* Deshayes in Lamarck Anim. sans Vertèb., VI. pp. 321, 322, 325.
1838. *Circe dispar* Gray, Analyst, VIII, p. 307.
1841. *Cytherea pulicaris*, Delessert, Rec. Coq. Lamarck, pl. IX, figs. 5*a*—*c*.
1843. *Cytherea Dispar*, Hanley, Rec. Biv. Shells, p. 103.
1845. *Cytherea dispar* Catlow & Reeve, Conch. Nomencl., p. 37.
1847. *Cytherea muscaria* and *C. pulicaris* Chenu, Illustr. Conchyliol., *Cytherea* pl. XII, figs. 1, 1*a*, *b*; 2, 2*a*, *b*; 3, 3*a*, *b*.
1851. *Circe dispar* Sowerby, Thes. Conch., II, p. 650, pl. CXXXVII, figs. 10, 11; pl. CLXIII, figs. 53, 54.
1853. *Circe dispar* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 89.
1853. *Circe dispar* Mörch, Cat. Yoldi, II, p. 26.
1856. *Venus dispar* Hanley in Wood Ind. Test., p. 49, pl. VIII, fig. 91.
1857. *Venus dispar*, Römer, Krit. Untersuch., p. 97,
1857. *Circe dispar* Adams, H. & A., Gen. Rec. Moll., II, p. 429.
1858. *Circe dispar* Fischer, P., Journ. Conchyliol., VII, p. 108.
1860. *Cytherea dispar* Reeve, Elem. Conch., II, p. 108.
1863. *Cytherea* (*Circe*) *dispar* Deshayes, Cat. Moll. Réunion, p. 12.
1863. *Venus* (*Cytherea-Circe*) *dispar* and *V.* (*C.*—*C.*) *mixta* Römer, Malakozool. Blätt., IX, pp. 21, 22.
1863. *Circe dispar* and *C. marmorata* Reeve, Conch. Icon., XIV, *Circe*, pl. VI, figs. 24, *a*, *b*; pl. VIII, fig. 30.

1868. *Cytherea* (*Crista*) *dispar* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (I), *Veneracea*, p. 32, pl. XI, figs. 5, 6.
1869. *Circe dispar* Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 232.
1869. *Circe* (*Crista*) *dispar* Issel, Malacol. Mar. Rosso, p. 70.
1869. *Venus* (*Cytherea—Circe*) *dispar* Römer, Mon. Venus, I, p. 184, pl. I, figs. 1, *1a—d*, *1i*, fig. 4
1871. *Circe dispar* Lischke, Japan. Meeresconch., II, p. 109.
1876. *Circe dispar* Tapparone-Canefri, Viag. "Magenta". p. 236.
1880. *Circe dispar* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 325.
1882. *Circe dispar* Dunker, Ind. Moll. Mar. Japon., p. 202.
1890. *Circe* (*Crista*) *dispar* Paetel, Cat. Conch. Samm., III, p. 75.
1895. *Circe dispar* Pilsbry, Cat. Mar. Moll. Japan, p. 128.
1906. *Circe dispar* Owston, Japan. Loochooan Shells, p. 39.
1909. *Circe* (*Crista*) *dispar* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 235.

After a careful examination of the material of this species in the Btitish Museum (Nat. Hist.), London, and the literature I have no doubt that *Venus discors* Dillwyn, *V. muscaria*, *V. pulicaris*, *V. mixta* and *V. cuneata* (all of Lamarck), and *Circe marmorata* Reeve are all synonyms of *Gafrarium dispar* (Dillwyn).

The species is discussed at length by Römer, and his figures of the shells of different ages show the distinguishing characters of the species very well.

Distribution: — *Gafrarium dispar* has a wide range in the Indo-Pacific Region. A detailed list of its records was published by Lynge.

In the "Siboga" collection it is represented by two young shells collected at the Anchorage off Seba, Savu (St. 58) and Lamakera, Solor Island (St. 61).

3. *Gafrarium tumidum* Röding.

1741. *Testa pectinata* Rumph, Amboin. Rarit., p. 132, pl. XLII, fig. D.
1742. *Concha crassa, striata* etc., Gualtieri, Ind. Test.. pl. LXXII, figs. E, F. pl. LXXV, fig. A.
1773. *Rys Doublett*, Knorr, Délices Yeux, VI, p. 8, pl. III, fig. 3.
1780. *Venus pectinata* Born, Test. Mus. Caes. Vindobon., p. 74.
1784. *Venus pectinata linnaei* Chemnitz, (ex parte, non Linn.), Conch.-Cab., VII, p. 28, pl. XXXIX, figs. 415—417.
1784. *Cardium nexilis* Martyn. Univ. Conch., pl. CXXX, fig. a. (right).
1797. Bruguière, Encyclopéd, Méthod., pl. CCLXXI, figs. *4a*, *b*.
1798. *Gafrarium Tumidum* and *G. Angulatum* Röding, Mus. Boltenianum, pp. 176, 177.
1818. *Cytherea gibbia* and *C. ranella* Lamarck, Anim. sans Vertèb., V, pp. 577, 578.
1824. *Cytheria* (*sic*) *gibbia* and *C. ranella* Dubois, Epitome, p. 71.
1825. *Cytherea gibbia* Sowerby Cat. Tankerville, p. 13.
1830. *Cytherea gibbia* Deshayes, Encyclopéd. Méthod., II. p. 59.
1830. *Cytherea gibbia* Sowerby, Gen. Shells, II, pl. II, fig. 5.
1835. *Cytherea gibbia* and *C. ranella* Deshayes in Lamarck Anim. sans Vertèb., VI, pp. 323, 324.
1840. *Cytherea gibbia* Pfeiffer, Krit. Reg., p. 66.
1841. *Cytherea gibbia* Reeve, Conch. Syst., I, p. 94, pl. LXX, fig. 5.
1843. *Circe Gibbia* and *C. Ranella* Hanley, Rec. Biv. Shells, p. 108.
1845. *Cytherea gibbia* Catlow & Reeve, Conch. Nomencl., p. 38
1847. *Cytherea gibbia* and *C. ranella* Chenu, Illustr. Conchyliol., *Cytherea*, pl. XII, figs. *6a—c*, *7a—c*, *8a—c*, *9a—c*.
1851. *Circe gibbia* Sowerby, Thes. Conch., II, p. 649, pl. CXXXVII, figs. 4—7.
1853. *Circe gibbia* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc.. p. 90.
1853. *Circe pectinata* Mörch, (non Linn.), Cat. Yoldi, II, p. 26.

1856. *Cardium putinatum* (non Linn.) and *Venus pectinata* (non Linn.), Hanley in Wood Ind. Test., p. 34, pl. V, fig. 30; p. 49, pl. VIII, fig. 90.
1857. *Cytherea gibbia* Römer, Krit. Untersuch., p. 96.
1857. *Circe gibbia* Adams, H. & A., Gen. Rec. Moll., II, p. 429.
1858. *Circe gibbia* Fischer, P., Journ. Conchyliol., VII, p. 337.
1860. *Cytherea gibbia* Reeve, Elem. Conch., II, p. 108.
1863. *Cytherea* (*Crista*) *gibbia* Römer, Malakozool. Blätt., X, p. 17.
1863. *Circe pectinata* (non Linn.) and *C. gibba* (sic ex parte) Reeve, Conch. Icon., XIV, *Circe*, pl. V, figs. 20*a*, *c*, 21*b*, *c*, *d*.
1865. *Circe gibbosa* Fraser, Proc. Zool. Soc. London, p. 196.
1867. *Circe gibba* (sic), Mitchell, Cat. Mus. Madras, p. 65.
1868. *Cytherea gibbia* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (I), *Veneracea*, p. 51, pl. XVIII, figs. 7—9.
1869. *Circe* (*Crista*) *gibba* (sic), Dunker, Cat. Mus. Godeffroy, IV, p. 111.
1869. *Circe gibba* (sic), Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 882.
1869. *Cytherea* (*Crista*) *gibba* (sic), Issel, Malacol. Mar. Rosso, p. 70.
1869. *Venus* (*Cytherea—Crista*) *gibbia*, Römer, Mon. Venus, p. 176, pl. XLVII, figs. 2, 2*a*—*e*.
1869. *Circe gibbia* von Martens, von der Deckens Reise, p. 66.
1869. *Circe gibbia* Adams, A., Ann. Mag. Nat Hist., (4) III, p. 233.
1876. *Circe gibbia* Tapparone-Canefri, Viag. "Magenta", p. 237.
1878. *Cytherea* (*Crista*) *gibbia* Kobelt, Illustr. Conchylienbuch, p. 335.
1880. *Circe* (*Crista*) *gibbia* von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 325.
1882. *Circe gibbia* Dunker, Ind. Moll. Mar. Japon., p. 202.
1884. *Cytheraea* (sic) *gibbia* Grasset, Ind. Test. Viv., p. 264.
1885. *Circe gibbia* Smith, "Challenger" Lamellibranchia, p. 143.
1887. *Circe* (*Crista*) *gibbia* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 211.
1889. *Circe gibba* (sic), Morlet, L., Journ. Conchyliol., XXXVII, p. 169.
1890. *Circe* (*Crista*) *gibba* (sic), Böttger, O., Ber. Senckenberg. Ges., p. 170.
1890. *Circe gibbia* Paetel, Cat. Conch. Samm., III, p. 75.
1891. *Circe* (*Crista*) *gibbia* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 231.
1895. *Cicre gibbia* Pilsbry, Cat. Mar. Moll. Japan, p. 128.
1896. *Crista gibbia* Casto de Elera, Cat. Sist. Filip., p. 746.
1898. *Crista gibbia* Melvill & Sykes, Proc. Malacol. Soc. London, V, p. 47.
1898. *Crista gibbia* Melvill & Standen, Journ. Conch., IX, p. 83.
1903. *Crista gibbia* Hidalgo, Obras Malacol., II, p. 231.
1905. *Crista gibbia* Hidalgo. Cat. Filip., p. 331.
1905. *Crista gibbia* Dautzenberg & Fischer, H., Journ. Conchyliol., LIII, p. 213.
1905. *Circe gibbia* Owston, Japan. Loochooan Shell, p. 39.
1909. *Circe* (*Crista*) *gibbia* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr., Nat. Math., (7) V, p. 234.
1909. *Crista gibbia* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 132.
1911. *Crista gibbia* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 51, pl. XIX, figs. 6. 7.
1928. *Circe gibba* (sic), Faustino, Summary Philippine Mar. Freshw. Moll., p. 77.

REEVE's fig. 21*a* is that of a full-grown shell of *Gafrarium menkei* (Jonas)[1]) and not of *G. gibbia* which is a synonym of *G. tumidum*. The shells of *G. tumidum* are neither so elongate nor so tumid as those of *G. menkei*, and do not have so prominent and incurved umbones. In *G. menkei*, further, there are only traces of transverse ribs on the post-dorsal area, while in *G. tumidum* there are about a dozen quite distinct transverse ribs in this region.

Distribution: — *G. tumidum* has a wide range in the Indo-Pacific Region. A detailed list of its records is published in LYNGE's paper.

In the "Siboga" collection the species is represented mainly by half grown shells collected

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1) JONAS, J. H. — Zeitschr. Malakozool., III, p. 66 (1846).

in the Bay of Labuan Tring, west coast of Lombok (St. 19), Anchorage off Dongala, Palos Bay, Celebes (St. 86), Anchorage off Beo, Karakelang Islands (St. 131) and Sanana Bay, east coast of Sula Besi (St. 193).

4. *Gafrarium catillus* Hedley. (Plate VI, figs. 15, 16).

1909. *Gafrarium catillus* Hedley, Proc. Linn. Soc. N. S. Wales, XXXIV, p. 430, pl. XXXVII, figs. 24—27.

A single somewhat worn shell dredged at St. 99, agrees very well with Hedley's description and figures of *Gafrarium catillus*. The "Siboga" shell is not so "angled dorsally" and the ribbing on the surface of the valves is not so prominent, but these slight differences are due more to age and the worn condition of the "Siboga" shell. I figure this shell.

Distribution: — *Gafrarium catillus* was found by Hedley to be a common species off the Hope Island in 5—10 fathoms of water.

The single "Siboga" specimen was, as noted above, dredged at the Anchorage off North Ubian (St. 99, 16—23 metres).

Genus **Paphia** Röding.

1798. *Paphia* Röding, Mus. Boltenianum, p. 122.
1811. *Tapes* Megerle, Mag. Ges. Naturf. Freunde Berlin, V, p. 51.
1853. *Tapes* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 159.
1857. *Tapes* Adams, H. & A., Gen. Rec. Moll., II, p. 434.
1864. *Tapes* Reeve, Conch. Icon., XIV, *Tapes*, pl. I (explanation).
1870. *Tapes* Römer, Mon. Venus, p. 17,
1887. *Tapes* Fischer, P., Man. Conchyliol., p. 1085.
1902. *Paphia* Dall, Proc. U. S. Nat. Mus., XXVI, p. 362.
1903. *Paphia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1321.
1914. *Tapes* Jukes-Browne, Proc. Malacol. Soc. London, XI, p. 89.

Dall and Jukes-Browne have discussed at length the divisions and subdivisions of the genus *Paphia* Röding. I agree in the main with Dall, but with Jukes-Browne have adopted the subgenus *Amygdala* Römer in preference to *Ruditapes* Chiamenti. The genotype is *Paphia ala papilionis* Röding.

The subgenera represented in the "Siboga" collection are: — *Paphia s.s.*, *Tapes* Megerle — type *Paphia* (*Tapes*) *literata* (Linn.); *Protapes* Dall [1]) — type *Paphia* (*Protapes*) *gallus* (Gmelin); *Paratapes* Stoliczka [2]) — type *Paphia* (*Paratapes*) *textile* (Gmelin) and *Amygdala* [3]) Römer — type *Paphia* (*Amygdala*) *decussata* (Linn.).

1. *Paphia* (*Paphia*) *ala papilionis* Röding.

1757. *Came*, D'Argenville, La Conch., Appendix, p. 393, pl. III, fig. D.
1765. *Moule ou Came beauté*, Knorr, Délices Yeux, p. 35, pl. XVIII, fig. 4.
1784. *Ala papilionis* Chemnitz, Conch.-Cab., VII, p. 46, pl. XLII, fig. 441.

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1) Dall, W. H. — Proc. U. S. Nat. Mus., XXVI, p. 362 (1902).
2) Stoliczka, F. — Cretaceous Pelecypoda S. India, p. 144 (1870).
3) Römer, E. — Krit. Untersuch., p. 16 (1857).

1784. *Cochlea cretata* Martyn, Univ. Conch., IV, pl. CXXXVII (left figur).
1788. *Ala papilionis*, Schröter, Conch.-Cab. Namen Reg., p. 4.
1790. *Venus rotundata* Gmelin (non Linn.), Syst. Nat., (ed. XIII), p. 3294.
1797. Bruguière, Encyclopéd. Méthod., pl. CCLXXXI, figs. 3*a*, *b*.
1798. *Paphia Ala papilionis* Röding, Mus. Boltenianum, p. 175.
1802. *Venus rotundata* Bosc (non Linn.), Hist. Nat. Coq., III, p. 74.
1817. *Venus rotundata* Dillwyn, Descr. Cat., I, p. 204.
1817. *Venus radiata* Schumacher (non Chemnitz), Essai Nouv. Syst., p. 136, pl. X, figs. 2, 2*a*.
1818. *Venus papilionacea* Lamarck, Anim. sans Vertèb., V. p. 594.
1824. *Venus papilionacea* Dubois, Epitome, p. 73.
1825. *Venus papilionacea* Sowerby, Cat. Tankerville, p. 15.
1826. *Pullastra papilionacea* Sowerby, Gen. Shell, II, *Pullastra* fig. 3.
1828. *Venus rotundata* Blainville, Dict. Sci. Nat., LVII, p. 277.
1832. *Venus papilionacea* Deshayes, Encyclopéd. Méthod.. III, p. 1118.
1835. *Venus papilionacea* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 352.
1840. *Venus papilionacea* Pfeiffer, Krit. Reg., p. 66.
1841. *Venus papilionacea* Sganzin, Cat. Coq. Ile France, p. 7.
1841. *Pullastra papilionacea* Reeve, Conch. Syst., I, p. 96, pl. LXXII, fig. 3.
1843. *Venus Rotundata* Hanley (non Linn.), Rec. Biv. Shells, p. 120.
1844. *Venus litterata*, Potiez & Michaud (non Linn.) Gal. Douai, II, p. 233.
1845. *Pullastra papilionacea* Catlow & Reeve, Conch. Nomencl.; p. 41.
1847. *Venus Papilionacea* Chenu, Illustr. Conchyliol., *Venus* pl. VI, figs. 5, 5*a*, *b*.
1852. *Tapes papilionacea* Sowerby, Thes. Conch., II, p. 679, pl. CXLV, figs. 1, 2.
1853. *Tapes rotundata* Deshayes, (non Linn.), Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 167.
1853. *Pullastra rotundata* Mörch. (non Linn.), Cat. Yoldi, II, p. 21.
1855. *Venus Meleagris* Hanley, Ipsa Linn. Conch., p. 81.
1855. *Venus papilionacea* Berge, Conchylienbuch, p. 58, pl. V. fig. 6.
1856. *Venus rotundata* Hanley in Wood Ind. Test., p. 50, pl. VIII, fig. 103.
1857. *Venus* (*Tapes-Parembola*) *rotundata* Römer, Krit. Untersuch., p. 123.
1857. *Tapes rotundata* Adams, H. & A., Gen. Rec. Moll., II, p. 435.
1860. *Tapes papilionacea* Reeve, Elem. Conch., II, p. 106.
1862. *Tapes papilionacea* Chenu, Man. Conchyliol., II, p. 93, fig. 414.
1864. *Tapes rotundata* Reeve (non Linn.), Conch. Icon., XIV, *Tapes*, pl. II, fig. 7.
1864. *Venus* (*Tapes-Textrix*) *papilionacea* Römer, Malakozool. Blätt., XI, p. 21.
1867. *Tapes rotundata* Mitchell, Cat. Mus. Madras, p. 66.
1870. *Venus papilionacea* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (I) *Veneracea*, p. 167. pl. XV, fig. 6.
1870. *Venus* (*Tapes-Textrix*) *papilionacea* Römer, Mon. Venus, II, p. 21, pl. VI, figs. 1, 1*a*—*c*.
1880. *Tapes papilionaceus* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 326.
1890. *Tapes* (*Textrix*) *papilionacea* and *T.* (*T.*) *rotundata* Paetel, Cat. Conch. Samm., III, pp. 80, 81.
1892. *Tapes papilionacea* Crosse & Fischer. Journ. Conchyliol. XL, p. 76.
1909. *Tapes* (*Paratapes*) *papilionaceus* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 236.
1929. *Tapes papilionaceus* Dautzenberg, Faun. Colon. Français., III, p. 604.

I agree with RÖMER that *P.* (*P.*) *ala papilionis*, mostly recorded in literature as *papilionacea* Lam., is quite distinct from *P.* (*P.*) *rotundata* (Linn.).

Distribution: — *P.* (*P.*) *ala papilionis* probably has a wide range in the Indo-Pacific Region, but as was remarked by LYNGE, it has probably been confused with other allied species.

In the "Siboga" collection there is only a young left valve collected in the Bay of Bima (St. 47).

2. *Paphia* (*Paphia*) *exarata* (Philippi).

1846. *Venus exarata* Philippi, Abbild. Beschreib. Conch., III, p. 109, *Venus*, pl. V, figs. 6, 6, 6.
1852. *Tapes exarata* Sowerby, Thes. Conch., II, p. 680, pl. CXLV, fig. 18.
1853. *Tapes exarata* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, p. 62.
1857. *Venus exarata* Römer, Krit. Untersuch., p. 125.
1857. *Tapes* (*Pullastra*) *exarata* Adams, H. & A., Gen. Rec. Moll., II. p. 436.
1860. *Tapes exarata* Reeve, Elem. Conch., II, p. 106.
1864. *Venus* (*Tapes*, *Textrix*) *exarata* Römer, Malakozool. Blätt., XI, p. 24.
1869. *Tapes exarata* Issel, Malacol. Mar. Rosso, p. 63.
1869. *Tapes exarata* Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 234.
1870. *Venus* (*Tapes*, *Textrix*) *exarata* Römer, Mon. Venus, II, p. 27, pl. VIII, figs. 2, 2*a*, *b*.
1882. *Tapes exarata* Dunker, Ind. Moll. Mar. Japon., p. 206.
1887. *Tapes exarata* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 213.
1890. *Tapes* (*Textrix*) *exarata* Paetel, Cat. Conch. Samm., III, p. 78.
1895. *Tapes exarata* Pilsbry, Cat. Mar. Moll. Japan, p. 129.
1906. *Tapes exarata* Owston, Japan. Loochooan Shells, p. 39.

The "Siboga" shells, which I assign to *P.* (*P.*) *exarata* agree in all respects with the detailed description and figures by RÖMER.

Distribution: *P.* (*P.*) *exarata* was described from the Red Sea, but the species has since been recorded from the Mergui Archipelago and Japan.

In the "Siboga" collection there is an adult right valve of the species brought up in a trawl at St. 318 (6° 36′.5 S., 114° 55′.5 E., 88 metres) and a young shell at St. 320 (6° 5′ S., 114° 7′ E., 82 metres).

3. *Paphia* (*Tapes*) *literata* (Linn.).

1684. *Concha levis albida* etc. Bonnani, Recr. mentis oculi, p. 107, fig. 67.
1685. *Tellina magna* etc. Lister, Hist. Conch., pl. CCCCII, fig. 246.
1741. *Chama litterata oblonga* Rumph, Amboin. Rarit., p. 139, XLIII*a*, fig. B.
1742. *Chama inaequilatera* etc., Gualtieri, Ind. Test., pl. LXXXVI, fig. F.
1748. *Chama Bivalve à lacets* Regenfuss, Rec. Coq., pl. IV, fig. 39.
1757. *Chama litterata* d'Argenville, La Conch., pp. 281, 286, pl. XXI, fig. A.
1758. *Venus literata* Linnaeus (ex parte), Syst. Nat., (ed. X), p. 689.
1764. *Venus literata* Linnaeus, Mus. Lud. Ulr., p. 508.
1764. *Coquille à lettres* Knorr, Délices Yeux, I, pl. VI, fig. 4.
1767. *Venus literata* Linnaeus, Syst. Nat., (ed. XII), p. 1135.
1780. *Venus literata* Born, Test. Mus. Caes. Vindobon., p. 74.
1780. *Came* Favanne, La Conch., pl. XLVII, fig. A 1.
1784. *Cochlea arborescens* Martyn, Univ. Conch., pl. CXXXVII, (right figure).
1784. *Venus literata Linnaei* and *V. nocturna* etc. Chemnitz, Conch. Cab., VII, pl. XLI, figs. 432—434, 435.
1788. *Venus literata* and *V. nocturna* Schröter, Conch. Cab. Namen Reg., p. 112.
1788. *Venus literata* Barbut, Gen. Verm., pl. IV, fig. 15.
1790. *Venus litterata* Gmelin, Syst. Nat., (ed. XII), p. 3293.
1797. *Pectunculus literatus* Humphrey, Mus. Calonnianum, p. 49.
1797. Bruguière, Encycloped. Méthod., pl. CCLXXX, figs. 4*b*, *b*; pl. CCLXXXI, fig. 1.
1798. *Paphia litterata* and *P. nocturna* Röding, Mus. Boltenianum, p. 176.
1802. *Venus litterata* Bosc, Hist. Nat. Coq., III, p. 73, pl. XIX, fig. 1.
1817. *Venus literata* Dillwyn, Descr. Cat., I, p. 203.
1826. *Pullastra litterata* Sowerby, Gen. Shells, II, *Pullastra*, fig. 2.

1827. *Venus literata* Dubois, Epitome, p. 73.
1828. *Venus litterata* Blainville, Dict. Sci. Nat., LVII, p. 277.
1832. *Venus litterata* Deshayes, Encyclopéd. Méthod., III, p. 1119.
1835. *Venus litterata* Deshayes in Lamarck, Anim. sans Vertèb., p. 353.
1840. *Venus litterata* Pfeiffer, Krit. Reg., p. 66.
1841. *Pullastra literata* Reeve, Conch. Syst., I, p. 96, pl. LXXII, fig. 2.
1843. *Venus Litterata* Hanley, Rec. Biv. Shells, p. 121.
1844. *Venus litterata* Potiez & Michaud, Gal. Douai, II, p. 233.
1845. *Pullastra literata* Catlow & Reeve, Conch. Nomencl., p. 42.
1847. *Tapes litteratus* Gray, Proc. Zool. Soc. London, p. 184.
1848. *Venus litterata* Chenu, Illustr. Conchyliol., *Venus*, pl. V, figs. 2, 2*a*, *b*, 3—6, 6*a*, *b*.
1852. *Tapes literata* Sowerby (ex parte), Thes. Conch. II, p. 684, pl. CXLVII, figs. 43, 45, 48.
1853. *Tapes literata* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc.. p. 164.
1853. *Tapes litterata* and *T. nocturna* Mörch, Cat. Yoldi, II, pp. 20, 21.
1855. *Venus Literata* Hanley, Ipsa Linn. Conch., p. 80.
1855. *Venus literata* Berge, Conchylienbuch, p. 57.
1856. *Venus literata* Hanley in Wood, Ind. Test., p. 50, pl. VIII, fig. 101.
1857. *Venus* (*Tapes-Parembola*) *literata* Römer, Krit. Untersuch. pp. 16, 20.
1857. *Tapes literata* Adams, H. & A., Gen. Rec. Moll., II, p. 435, pl. CIX, figs. 2*a*, *b*.
1858. *Tapes litterata* Fischer, P., Journ. Conchyliol., VII, p. 337.
1860. *Tapes litterata* Reeve, Elem. Conch., II, p. 106.
1862. *Tapes litterata* Chenu, Man. Conchyliol., II, p. 93, figs. 415—417.
1864. *Venus* (*Tapes-Parembola*) *literata* Römer, Malakozool. Blätt., XI, p. 30.
1864. *Tapes literata* Reeve, Conch. Icon., XIV, *Tapes*, pl. I, fig. 2*a*—*c*.
1865. *Tapes litterata* Vaillant, Journ. Conchyliol., XIII, p. 119.
1867. *Tapes literata* Mitchell, Cat. Mus. Madras, p. 65.
1869. *Venus literata* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.). XI (1), *Veneracea*, p. 157, pl. XIV, figs. 1—4.
1869. *Tapes litterata* Dunker, Cat. Mus. Godeffroy, IV, p. 111.
1870. *Venus* (*Tapes-Parembola*) *literata* Römer, Mon. Venus, II, p. 38, pl. XII, figs. 11*a*—*d*.
1878. *Tapes* (*Parembola*) *litteratus* Kobelt, Illustr. Conchylienbuch, p. 336, pl. XCVI, fig. 1.
1880. *Tapes literatus* von Martens, Möbius Beiträge Mauritius, Seychell., p. 326.
1881. *Tapes litterata* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 14.
1884. *Tapes litterata* Tryon, Struct. Syst. Conch., III, p. 182, pl. CXIV, fig. 35.
1884. *Tapes litterata* Grasset, Ind. Test. Viv., p. 269.
1887. *Tapes litteratus* Fischer, P., Man. Conchyliol., p. 1086.
1887. *Tapes literatus* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 213.
1890. *Tapes* (*Parembola*) *litterata* and *T.* (*P.*) *nocturna* Paetel, Cat. Conch. Samm., III, p. 80.
1891. *Tapes litteratus* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 234.
1896. *Tapes* (*Amygdala*) *litterata* Casto de Elera, Cat. Sist. Filip., p. 750.
1899. *Tapes* (*Parembola*) *litterata* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 196.
1902. *Paphia* (*Tapes*) *literata* Dall, Proc. U. S. Nat. Mus., XXVII, p. 362.
1902. *Tapes litteratus* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1903. *Tapes literatus* Hidalgo, Obras Malacol., II, p. 242.
1905. *Tapes literatus* Hidalgo, Cat. Filip., p. 333.
1905. *Tapes litterata* Tillier & Bavay, Bull. Soc. Zool. France, XXX, p. 177.
1906. *Tapes literata* Owston, Japan. Loochooan Shells, p. 39.
1909. *Tapes litteratus* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 468.
1910. *Paphia literata* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1910. *Tapes litteratus* Dautzenberg, Bull. Inst. Océanogr, N°. 161, p. 3.
1925. *Paphia* (*Tapes*) *literata* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N°. 9, p. 303.
1929. *Paphia literata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 80.

P. (*T.*) *literata* is very variable. Of the two "Siboga" shells one is almost uniformly white except for the brownish posterior part and traces of three oblique bands running downwards from the umbonal region, while the other has brownish irregular concentric bands on its surface.

Distribution: *P.* (*T.*) *literata* is widely distributed in the Indo-Pacific Region.

In the "Siboga" collection there are two very worn shells of the species from Elat reef (St. 261) and reefs in Madura Bay (St. 51).

4. *Paphia* (*Protapes*) *sinuosa* (Lamarck).

1818. *Venus sinuosa* Lamarck, Anim. sans Vertèb., V, p. 604.
1824. *Venus sinuosa* Dubois, Epitome, p. 74.
1828. *Venus sinuosa* Blainville, Dict. Sci. Nat., LVII, p. 281.
1835. *Venus sinuosa* Deshayes in Lamarck Anim. sans Vertèb. VI, p. 366.
1843. *Venus sinuosa* Hanley, Rec. Biv. Shells, p. 125.
1845. *Venus sinuosa* Catlow & Reeve, Conch. Nomencl., p. 35.
1852. *Tapes sinuosa* Sowerby, Thes. Conch., II, p. 683, pl. CXLV, fig. 10.
1853. *Tapes sinuosa* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 161.
1857. *Venus sinuosa* Römer, Krit. Untersuch., p. 74.
1857. *Tapes* (*Pullastra*) *sinuosa* Adams, H. & A., Gen. Rec. Moll., II, p. 436.
1860. *Tapes sinuosa* Reeve, Elem. Conch., II, p. 106.
1864. *Tapes sinuosa* Reeve, Conch. Icon., XIV, *Tapes*, pl. V, fig. 18.
1864. *Venus* (*Tapes-Textrix*) *sinuosa* Römer, Malakozool. Blätt., XI, p. 28.
1870. *Venus* (*Tapes-Textrix*) *sinuosa* Römer, Mon. Venus, II, p. 35, pl. XI, figs. 1, 1*a*—*c*.
1887. *Tapes Malabarius* var. *sinuosus* von Martens, Journ. Linn. Soc. London (Zool.), XXI, pp. 213, 214.
1890. *Tapes* (*Textrix*) *sinuosa* Paetel, Cat. Conch. Samm., III, p. 81.
1909. *Tapes* (*Protapes*) *sinuosa* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 238.

With Lynge, Römer and earlier authors I consider *P.* (*P.*) *sinuosa* as a distinct species; its distinguishing characters have been well summarized by Lynge.

Distribution: — *P.* (*P.*) *sinuosa* has been recorded from the Mergui Archipelago, Gulf of Siam, Australia and China.

In the "Siboga" collection there is a damaged left valve collected at Makassar (St. 71) and a young shell dredged between the islands of Loslos and Broken Islands, west coast of Salawatti (St. 162).

5. *Paphia* (*Paratapes*) *japonica* (Gmelin).

1782. *Venus literata* etc. and *V. striata* etc. Chemnitz, Conch-Cab., VI, p. 357, p. 358, pl. XXXIV, figs. 364, 365, 366.
1788. *Venus striata* Schröter, Conch-Cab. Namen Reg., p. 112.
1790. *Venus japonica* and *V. striata* Gmelin, Syst. Nat. (ed. XIII), p. 3279.
1798. *Venus porcata* and *V. striata* Röding, Mus. Boltenianum, p. 182.
1802. *Venus striata* and *V. Japonica* Bosc, Hist. Nat. Coq., III, p. 55.
1817. *Venus japonica* and *V. striata* Dillwyn, Descr. Cat., I, pp. 182, 183.
1818. *Venus tristis*, *V. vermiculata* and *V. elegantina* Lamarck, Anim. sans Vertèb., V, pp. 604, 606.
1824. *Venus elegantina*, *V. vermiculata* and *V. tristis* Dubois, Epitome, p. 74.
1828. *Venus elegantina*, *V. vermiculosa*, *V. japonica* and *V. striata* Blainville, Dict. Sci Nat., LVII, pp. 282, 283.
1835. *Venus tristis*, *V. vermiculosa* and *V. elegantina* Deshayes in Lamarck Anim, sans Vertèb., VI, pp, 366, 367, 369.

1840. *Venus japonica* and *V. striata* Pfeiffer, Krit. Reg., p. 64.

1841. *Venus tristis* and *V. elegantina* Delessert, Rec. Coq. Lam., pl. X, figs. 10*a—c*, pl. XI, figs. 3, 3*a*, *b*.

1843. *Venus tristis* Philippi, Abbild. Beschreib. Conch., I, pl. 40, *Venus*, pl. I, fig. 4.

1843. *Venus Tristis*, *V. Vermiculosa*, *V. Japonica* and *V. Striata* Hanley, Rec. Biv. Shells, p. 125, pl. XVI, fig. 37; p. 127, pl. XIII, fig. 46; and p. 127.

1845. *Venus striata* Catlow & Reeve, Conch. Nomencl., p. 36.

1849. *Venus striata* Philippi, Abbild. Beschreib. Conch., III, p. 49, *Venus*, pl. VIII, figs. 5, 6.

1850. *Venus Labuana* Adams & Reeve, "Samarang" Moll., p. 79, pl. XXI, fig. 16.

1853. *Venus striata* and *V. Labuana* Sowerby, Thes. Conch., III, p. 735, pl. CLXII, figs. 207, 213, 214.

1853. *Pullastra striata* Mörch, Cat. Yoldi, II, p. 22.

1853. *Chione striata*, *C. Japonica*, *C. regularis*, *C. Philippii*, *C. elegantina*, *C. tristis* and *C. vermiculosa* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., pp. 145, 146, 148, 150, 159.

1853. *Chione regularis* Deshayes, Proc. Zool. Soc. London, p. 7.

1856. *Venus striata* and *V. aurisiaca* Hanley in Wood, Ind. Test., p. 47, pl. VII, fig. 56, Supplement, p. 204, pl. II, figs. 1, 2.

1856. *Venus Caledonica* Bernardi, Journ. Conchyliol., V, p. 82, pl. III, fig. 7.

1857. *Venus* (*Tapes*, *Amygdala*) *japonica* and *V.* (*T.*, *A.*) *striata* Römer, Krit. Untersuch., pp. 73, 74.

1857. *Chione* (*Chamelaea*) *elegantina*. *C.* (*C.*) *japonica*, *C.* (*C.*) *Philippii* and *C.* (*C.*) *striata* Adams, H. & A., Gen. Rec. Moll., II, p. 423.

1864. *Venus* (*Tapes*, *Hemitapes*) *striata* Römer, Malakozool. Blätt., XI, p. 86.

1864. *Tapes Philippi*, *T. Japonica*, *T. tristis* and *T. striata* Reeve, Conch. Icon., XIV, *Tapes*, pl. VIII, figs. 36, *a*, *b*; pl. IX, figs. 43, 46; figs. 44*a*, *b*; figs. 45*a*, *b*.

1869. *Chemelaea philippi*, *C. striata*, and *C. tristis* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 881.

1869. *Venus striata* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (I) *Veneraceae*, p. 127, pl. V, figs. 12—14.

1872. *Venus* (*Tapes-Hemitapes*) *tristis* and *V.* (*T.-H.*) *striata* Römer, Mon. Venus, II, p. 100, pl. XXXIV, fig. 2, 2*a*, *b*; p. 101, pl. XXXV, fig. 1—1*k*.

1882. *Chione* (*Chamelaea*) *chemnitzii*, Dunker, Ind. Moll. Mar. Japon., p. 197.

1884. *Tapes Japonica* and *T. vermiculata* Grasset, Ind. Test. Viv., p. 269.

1884. *Pullastra Chemnitzii* Grasset, loc. cit., p. 270.

1890. *Tapes* (*Hemitapes*) *striata* and *T.* (*H.*) *tristis* Paetel, Cat. Conch. Samm., III, pp. 81, 82.

1895. *Chione striata* Pilsbry, Cat. Mar. Moll. Japan, p. 128.

1896. *Tapes striatus* Casto de Elera, Cat. Sist. Filip., p. 748.

1898. *Chione striata* Mellvil & Sykes, Proc. Malacol. Soc. London, III, p. 47.

1903. *Tapes striatus* and *T. tristis* Hidalgo, Obras Malacol., II, pp. 257, 260.

1905. *Tapes striatus* and *T. tristis* Hidalgo, Cat. Filip., p. 334.

1906. *Tapes striata* Owston, Japan. Loochooan Shells, p. 39.

1909. *Hemitapes striatus* Lamy, Bull. Mus. d'Hist. Nat. Paris, XI, p. 469.

1910. *Paphia tristis* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.

1928. *Paphia striata* and *P. tristis* Faustino, Summary Philippine Mar. Freshw. Moll., pp. 81, 82.

The synonymy of *P.* (*P.*) *japonica* given above is the result of a careful examination of all old collections in the British Museum (Nat. Hist.), London and a thorough scrutiny of the literature.

The "somewhat squarely triangular" to "obliquely subcordate", "cordate" and "triangularly ovate", as the shells of the so-called species were described by REEVE are simply slight variations of the Chemnitzian species *Venus literata* and *V. striata* and which were later christened *V. japonica* and *V. striata* by GMELIN. The species, for which the earliest valid name is *P.* (*P.*) *japonica* (Gmelin), is, in the adult stage, subcordate, subtrigonal, inequilateral, moderately tumid and often drawn out into a beak posteriorly. The sculpture consists of more or less regular, rather thick, rounded concentric ridges, which become thinner and irregular on the posterior part, and sometimes run into one another in the middle of the shell.

Distribution: — *P.* (*P.*) *japonica* is widely distributed in the Indo-Pacific.

The "Siboga" Expedition collected a number of shells of this species in the Bay of Labuan Tring (St. 19), Anchorage off Dongala, Palos Bay, Celebes (St. 86) and at Waru, Ceram (St. 174).

6. *Paphia* (*Paratapes*) *textile* (Gmelin).

1685. *Tellina major reticulata* Lister, Hist. Conch., pl. CCCC, fig. 239.
1742. *Chama inaequilatera* etc., Gualtieri, Ind. Test., pl. LXXXVI, fig. E.
1765. *Coquille à lettres* Knorr, Délices Yeux, III, p. 53, pl. XXVIII, fig. 4.
1780. *Moule* Favanne, La Conch. pl. XLIX, fig. 12.
1784. *Venus textrix* etc. Chemnitz, Conch.-Cab., VII, p. 48, pl. XLII, fig. 442.
1788. *Venus textrix* Schröter, Conch.-Cab. Namen Reg., p. 112.
1790. *Venus Textile* Gmelin, Syst. Nat., (ed. XIII), p. 3280.
1797. Bruguière, Encyclopéd. Méthod., pl. CCLXXXIII, figs. 1*a*, *b*.
1802. *Venus textile* Bosc, Hist. Nat. Coq., III, p. 56.
1817. *Venus Undulata* Dillwyn (non Born), Descr. Cat., I, p. 204.
1818. *Venus textile* Lamarck, Anim. sans Vertèb., V, p. 596.
1824. *Venus textile* Dubois, Epitome, p. 73.
1825. *Venus Textile* Sowerby, Cat. Tankerville, p. 15.
1828. *Venus textile* Blainville, Dict. Sci. Nat., LVII, p. 278.
1830. *Pullastra vulgaris* Sowerby, Gen. Shells, II, *Pullastra*, fig. 1.
1832. *Venus textile* Deshayes, Encyclopéd. Méthod., III, p. 1119.
1835. *Venus textile* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 354.
1841. *Pullastra vulgaris* Reeve, Conch. Syst., I, p. 96, pl. LXXII, fig. 1.
1843. *Venus Textile* Hanley, Rec. Biv. Shells, p. 121.
1845. *Pullastra vulgaris* Catlow & Reeve, Conch. Nomencl., p. 41.
1852. *Tapes textile* Sowerby, Thes. Conch., II, p. 681, pl. CXLVI, figs. 26—28.
1853. *Tapes textrix* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc., p. 171.
1853. *Pullastra textrix* Mörch, Cat. Yoldi, II, p. 21.
1855. *Venus textile* Berge, Conchylienbuch, p. 59.
1856. *Venus textile* Hanley in Wood, Ind. Test., p. 50, pl. VIII, fig. 104.
1857. *Venus* (*Tapes-Textrix*) *textile* Römer, Krit. Untersuch., p. 76.
1857. *Tapes textrix* Adams, H. & A., Gen. Rec. Moll., II, p. 435.
1860. *Tapes textile* Reeve, Elem. Conch., II, p. 106, pl. XXXV, fig. 193.
1864. *Venus* (*Tapes-Textrix*) *textrix* Römer, Malakozool. Blätt., XI, p. 20.
1867. *Tapes textrix* Mitchell, Cat. Mus. Madras, p. 66.
1869. *Tapes textrix* Frauenfeld, Verhandl. Zool. Bot. Ges, Wien, XIX, p. 883.
1870. *Venus textrix* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (I), *Veneracea*, p. 169, pl. XV, fig. 7.
1870. *Tapes testrix* (sic), MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1870. *Venus* (*Tapes, Textrix*) *textrix*, Römer, Mon. Venus, II, p. 19, pl. V, figs. 1, 1*a*—*c*.
1874. *Tapes textrix* von Martens, Vorderasiat. Conch., p. 104.
1878. *Tapes* (*Textrix*) *textile* Kobelt, Illustr. Conchylienbuch, p. 336, pl. XCVIII, fig. 11.
1884. *Tapes textrix* Grasset, Ind. Test. Viv., p. 269.
1884. *Tapes textrix* Tryon, Struct. Syst. Conch., III, p. 182.
1884. *Tapes* (*Textrix*) *textrix* Smith, Rept. Voy. "Alert", p. 97.
1885. *Tapes* (*Paratapes*) *textrix*, Smith, "Challenger" Lamellibranchia., p. 114.
1886. *Tapes textrix* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 103.
1887. *Tapes textrix* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 213.
1887. *Tapes* (*Paratapes*) *textrix* Fischer, P., Man. Conchyliol., p. 1086.

1890. *Tapes* (*Textrix*) *textrix* Paetel, Cat. Conch. Samm., III, p. 82.
1892. *Tapes textrix* Sowerby, Mar. Shells S. Africa, p. 59.
1896. *Tapes* (*Amygdala*) *textile* Casto de Elera, Cat. Sist. Filip., p. 750.
1898. *Tapes* (*Textrix*) *textrix* Melvill & Standen, Journ. Conch., IX, p. 83.
1899. *Tapes* (*Textrix*) *textrix* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 196.
1901. *Tapes textrix* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 281.
1902. *Tapes textrix* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1902. *Tapes* (*Paratapes*) *textilis* Dall, Proc. U. S. Nat. Mus., XXVII, p. 362.
1902. *Tapes textrix* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 293.
1903. *Tapes Textrix* Hidalgo, Obras Malacol., II, p. 251.
1905. *Tapes Textrix* Hidalgo, Cat. Filip., p. 334.
1910. *Paphia textile* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1917. *Tapes textrix* Odhner, Kungl. Svensk. Akad. Handl., LII, No. 16, p. 9.
1918. *Phapia textile* Hedley, Journ. Proc. Roy. Soc. N. S. Wales, LI, p. M. 25.
1928. *Paphia textrix* Faustino, Summary Phillippine Mar. Freshw. Moll., p. 82.

The distinguishing characters of this species from the closely allied *P.* (*P.*) *undulata* are discussed further (*postea* p. 241).

Distribution: — *P.* (*P.*) *textile* has a more extensive range in the Indian Ocean than *P.* (*P.*) *undulata*, and is found as far north-west as the Red Sea. In the Pacific area it has not been recorded north of the Philippines.

In the "Siboga" collection there are only odd valves of the species collected in the Bay of Labuan Tring, west coast of Lombok (St. 19), Bay of Pidjot, Lombok (St. 33) and Waru Bay, north coast of Ceram (St. 174).

7. *Paphia* (*Paratapes*) *undulata* (Born).

1742. *Chama inaequilatera* etc. Gualtieri, Ind. Test.. pl. LXXXVI, fig. H.
1778. *Venus undulata* Born, Ind. Rer. Nat., p. 54.
1780. *Venus undulata* Born, Test. Mus. Caes. Vindobon., p. 67.
1847. *Venus rimosa* Philippi, Zeitschr. Malakozool., IV, p. 88.
1848. *Venus rimosa* Philippi, Abbild. Beschreib. Conch., III, p. 77, *Venus*, pl. VII, fig. 7.
1852. *Tapes rimosa* Sowerby, Thes. Conch., II, p. 682, pl. CXLVI, fig. 29.
1853. *Tapes undulata* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 171.
1853. *Pullastra undulata* Mörch, Cat. Yoldi, II, p. 21.
1857. *Venus rimosa* Römer, Krit. Untersuch., p. 77.
1857. *Tapes undulata* Adams, H. & A., Gen. Rec. Moll., II, p. 435.
1860. *Tapes rimosa* Reeve, Elem. Conch., II, p. 106.
1864. *Tapes undulata* and *T. vernicosa* Reeve, Conch. Icon., XIV, *Tapes*, pl. III, fig. 8, pl. X, fig. 48.
1864. *Venus* (*Tapes-Textrix*) *undulata* Römer, Malakozool. Blätt., XI, p, 21.
1867. *Tapes undulata* Angas, Proc. Zool. Soc. London, p. 923.
1869. *Tapes undulata* Dunker, Cat. Mus. Godeffroy, IV, p. 111.
1869. *Tapes undulata* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 885.
1869. *Tapes undulata* Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 235.
1870. *Venus* (*Tapes-Textrix*) *undulata* Römer, Mon. Venus, II, p. 20, pl. V, figs. 2, *2a—e*.
1871. *Tapes undulatus* Lischke, Japan. Meeresconch., II, p. 171.
1874. *Tapes undulatus* Lischke, Japan. Meeresconch., III, p. 80.
1876. *Tapes undulata* Tapparone-Canefri, Viag. "Magenta", p. 233.
1882. *Tapes undulatus* Dunker, Ind. Moll. Mar. Japon., p. 206.
1885. *Tapes* (*Paratapes*) *undulata* Smith, "Challenger" Lamellibranchia., p. 115.
1887. *Tapes undulatus* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 213.

1890. *Tapes* (*Textrix*) *undulata* Paetel, Cat. Conch. Samm., III, p. 82.
1891. *Tapes undulatus* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 273.
1895. *Tapes undulatus* Pilsbry, Cat. Mar. Moll. Japan, p. 129.
1896. *Tapes* (*Amygdala*) *undulata* Casto de Elera, Cat. Sist. Filip., p. 750.
1903. *Tapes undulatus* Hidalgo, Obras Malacol., II, p. 252.
1905. *Tapes undulatus* Hidalgo, Cat. Filip., p. 335.
1906. *Tapes* (*Textrix*) *undulata* Melvill & Standen, Proc. Zool. Soc. London, p. 832.
1906. *Chione undulata* Owston, Japan. Loochooan Shells, p. 39.
1909. *Tapes* (*Paratapes*) *undulatus* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 237.
1911. *Tapes undulatus* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 52, pl. XIX, fig. 9.
1923. *Paphia undulata* (with *Tapes vernicosa* as synonym) Tomlin, Proc. Malacol. Soc. London, XV, p. 313.
1928. *Paphia undulata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 82.

As Römer pointed out *P.* (*P.*) *undulata* is closely allied to *P.* (*P.*) *textile* (Gmelin), but the latter species has a thinner, higher, more inflated and elongated shell with the anterior dorsal margin less concave and the posterior dorsal margin more oblique. The valves of *P.* (*P.*) *undulata*, further, have a sculpture consisting of well marked, though not deeply impressed, irregular concentric ridges particularly on the anterior part and the lower half of the shells. In old or worn shells the valves have an almost smooth surface.

Distribution: — *P.* (*P.*) *undulata* has a wide range in the Indo-Pacific; it has been recorded from the Persian Gulf, Ceylon, Mergui Archipelago, Gulf of Siam, Arafura Sea, Australian waters, the Philippines and Chinese and Japanese seas.

In the "Siboga" collection it is represented by a number of shells from the Bay of Labuan Tring, west coast of Lombok (St. 19), Macassar (St. 71), Saleyer Anchorage (St. 213) and the Anchorage off Noimini, south coast of Timor (St. 296).

8. *Paphia* (*Amygdala*) *variegata* (Sowerby).

1742. *Tellina inaequilatera* etc. Gualtieri, Ind. Test., pl. LXXXIX, fig. H.
1852. *Tapes variegata* Sowerby, Thes. Conch., II, p. 696, pl. CLI, figs. 133—138.
1853. *Tapes variegata*, *T. punicea* and *T. cinerea* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., pp. 179, 184.
1853. *Tapes Japonica* Deshayes (nec Gmelin), Proc. Zool. Soc. London, p. 10.
1853. *Tapes punicea* and *T. cinerea* Deshayes, Proc. Zool. Soc. London, pp. 10, 11.
1857. *Tapes* (*Cuneus*) *punicea* and *T.* (*C.*) *variegata* Adams, H. & A., Gen. Rec. Moll., II, p. 436.
1860. *Tapes variegata* Reeve, Elem. Conch., II, p. 106.
1864. *Tapes punicea*, *T. cinerea*, *T. variegata* and *T. semidecussata* Reeve, Conch. Icon., XIV, *Tapes*, pl. XII, figs. 61, 62, 64*a*, *b*; pl. XIII, fig. 67.
1864. *Venus* (*Tapes-Amygdala*) *variegata* Römer, Malakozool. Blätt., XI, p. 69.
1869. *Tapes variegatus* Lischke, Japan. Meeresconch., I, p. 118.
1869. *Cuneus variegatus* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 883.
1870. *Venus variegatus* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.) (I), *Veneracea*, p. 223, pl. XXXVIII, figs. 2—5.
1871. *Venus* (*Tapes-Amygdala*) *punicea*, *V.* (*T.-A.*) *variegata* and *V.* (*T.-A.*) *cinerea* Römer, *Mon. Venus*, p. 76, pl. XXVI, figs. 2, 2*a*—*c*; p. 78, pl. XXVII, figs. 2, 2*a*—*e*; p. 93, pl. XXIII, figs. 1, 1*a*, *b*.
1871. *Tapes variegatus* Lischke, Japan. Meeresconch., II, p. 108.
1874. *Venus variegatus* Lischke, Japan. Meeresconch., III, p. 79.
1882. *Tapes* (*Cuneus*) *variegata* Dunker, Ind. Moll. Mar. Japon., p. 207.

1884. *Tapes variegata* Grasset, Ind. Test. Viv., p. 269.
1884. *Tapes variegata* Smith, Rept. Voy. "Alert", p. 97.
1887. *Tapes variegata* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 213.
1889. *Tapes variegata* Morlet, Journ. Conchyliol., XXXVII, p. 170.
1890. *Tapes* (*Amygdala*) *punicea* and *T.* (*A.*) *variegata* Peatel, Cat. Conch. Samm., III, pp. 81, 82.
1891. *Tapes variegatus* Fischer, P.. Bull. Soc. Hist. Nat. d'Autun, IV, p. 150.
1895. *Tapes variegatus* Pilsbry, Cat. Mar. Moll. Japan, p. 130.
1896. *Tapes* (*Amygdala*) *variegata* Casto de Elera, Cat. Sist. Filip., p. 749.
1903. *Tapes variegatus* Hidalgo, Obras Malacol., II, p. 274.
1905. *Tapes variegatus* Hidalgo, Cat. Filip., p. 335.
1906. *Tapes variegata* Owston, Japan. Loochooan Shells, p. 39.
1909. *Tapes* (*Ruditapes*) *variegatus* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 240.
1910. *Paphia variegata* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1911. *Tapes variegatus* Pelseneer, "Siboga" Lamellibranches (Anat.), pl. XIX, fig. 8.
1917. *Tapes variegata* Odhner, Kungl. Svensk. Akad. Handl., LII, N⁰. 16, p. 9.
1928. *Tapes punicea* and *T. variegata* Faustino, Summary Philippine Mar. Freshw. Moll., pp. 81, 82.

Tomlin [1]) suggested that *Tapes variegata* Sowerby is a synonym of *Paphia philippinarum* (A. Adams & Reeve), I have re-examined the entire material in the British Museum (Nat. Hist.), London, and am unable to agree with this conclusion. In *P.* (*A.*) *variegata* the shell is much more compressed, the umbones are less tumid, and the sculpture is more delicate than that of *P.* (*A.*) *philippinarum*.

Lynge (op. cit.) was of opinion that *T. violascens* Deshayes [2]) can scarcely be separated from *P.* (*A.*) *variegata*, but the species, as is discussed further, is a synonym of *P.* (*A.*) *bruguieri* (Hanley).

Distribution: — *P.* (*A.*) *variegata* has been recorded from as far west as Mergui in the Indian Ocean and from Japan in the North to Australia and Tahiti in the South in the Pacific Ocean.

The "Siboga" Expedition collected two young shells of this species at the Anchorage off Dongala, Palos Bay, Celebes (St. 86).

9. *Paphia* (*Amygdala*) *bruguieri* (Hanley).

1797. Bruguière, Encycloped. Méthod., pl. CCLXXXIII, figs. 4*a*, *b*.
1845. *Venus Bruguieri* Hanley, Proc. Zool. Soc. London, p. 21.
1852. *Tapes Bruguieri* Sowerby, Thes. Conch., II, p. 696, pl. CLI, figs. 130, 131.
1853. *Tapes violascens* Deshayes, Proc. Zool. Soc. London, p. 10.
1853. *Tapes violascens* and *T. Bruguieri* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., pp. 181, 183.
1853. *Tapes Bruguierii*? Mörch, Cat. Yoldi, II, p. 20.
1856. *Venus Bruguieri* Hanley, Rec. Biv. Shells, Appendix, p. 362, pl. XV, fig. 59.
1857. *Tapes* (*Cuneus*) *Bruguieri* Adams, H. & A., Gen. Rec. Moll., II, p. 436.
1860. *Tapes Bruguieri* Reeve, Elem. Conch., II, p. 106.
1864. *Tapes Bruguieri* and *T. violascens* Reeve, Conch. Icon., XIV, *Tapes*, pl. XIII, figs. 68, 73.
1864. *Venus* (*Tapes*, *Amygdala*) *Bruguieri* Römer, Malakozool. Blatt., XI, p. 80.
1869. *Tapes* (*Cuneus*) *Bruguieri* Adams. A., Ann. Mag. Nat. Hist., (4) III, p. 235.
1871. ? *Venus* (*Tapes*, *Amygdala*) *violascens* and *V.* (*T.*, *A.*) *Bruguieri* Römer, Mon. Venus, II, p. 77, pl. XXVII, figs. 1, 1*a*, *b*; p. 94, pl. XXXII, figs. 4, 4*a*—*c*.

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1) Tomlin, J. R. le B. — Proc. Malacol. Soc. London, XV, p. 313 (1923).
2) See Reeve, L. — Conch. Icon., XIV, *Tapes*, pl. XIII, fig. 68 (1864).

1879. *Tapes Bruguieri* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 744.
1882. *Tapes* (*Cuneus*) *Bruguieri* Dunker, Ind. Moll. Mar. Japon., p. 208.
1884. *Tapes Bruguieri* Grasset, Ind. Test. Viv., p. 268.
1890. *Tapes* (*Amygdala*) *Bruguieri* Paetel, Cat. Conch. Sam., III, p. 78.
1895. *Tapes Bruguieri* Pilsbry, Cat. Mar. Moll. Japan, p. 130.
1902. *Tapes* (*Amygdala*) *bruguieri* Standen & Leicester, Ceylon Pearl Oyster Rept., V. p. 293.
1906. *Tapes bruguieri* Owston, Japan. Loochooan Shells, p. 39.

As noted already *Tapes violascens* Deshayes is synonymous with *P.* (*A.*) *bruguieri* (Hanley). The ovate-oblong shell of this species is more compressed than that of *P.* (*A.*) *variegata* and the sculpture is less pronounced.

Distribution: — *P.* (*A.*) *bruguieri* has been recorded from several localities in the Indo-Pacific Region.

In the "Siboga" collection there is a young shell and a left valve collected in the Bay of Pidjot, Lombok (St. 33).

Genus **Dosinia** Scopoli.

1777. *Dosinia* Scopoli, Introd. Hist. Nat., p. 399.
1798. *Cytherea* Röding (ex parte), Mus. Boltenianum, p. 177.
1838. *Arthemis* Gray, Analyst, VIII, p. 308.
1850. *Artemis* Reeve, Conch. Icon., VI, *Artemis*, pl. I (explanation).
1857. *Dosinia* Adams, H. & A., Gen. Rec. Moll., II, p. 430.
1862. *Dosinia* Römer, Mon. Dosinia, p. 7.
1887. *Dosinia* Fischer, P., Man. Conchyliol., p. 1082.
1902. *Dosinia* Dall, Proc. U. S. Nat. Mus., XXVI, p. 346.
1903. *Dosinia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1226.
1914. *Dosinia* Jukes-Browne, Proc. Malacol. Soc. London, XI, p. 63.
1930. *Dosinia* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰. 3, p. 229.

Dosinia s. s., with *Dosinia africana* (Gray) as type, is not represented in the collection before me, but there are a number of species of the subgenus *Austrodosinia* Dall [1]) — type *Dosinia* (*Austrodosinia*) *anus* (Philippi).

1. *Dosinia* (*Austrodosinia*) *sieboldi* (Reeve).

1850. *Artemis Sieboldii* Reeve, Conch. Icon., VI, *Artemis*, pl. VII, fig. 39.
1851. *Artemis Sieboldii* Sowerby, Thes. Conch., II, p. 669, pl. CXLIII, fig. 57.
1853. *Dosinia Sieboldii* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 21.
1857. *Dosinia Sieboldii* Adams, H. & A., Gen. Rec. Moll., II, p. 432.
1860. *Artemis Sieboldii* Reeve, Elem. Conch., II, p. 112.
1862. *Dosinia Sieboldii* Römer, Mon. Dosinia, p. 56, pl. XVI, fig. 4.
1869. *Dosinia rostrata* Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 233.
1882. *Dosinia sieboldi* Dunker, Ind. Moll. Mar. Japon., p. 203.
1890. *Dosinia sieboldi* Paetel, Cat. Conch. Samm., III, p. 91.
1895. *Dosinia sieboldi* Pilsbry, Cat. Mar. Moll. Japan, p. 126.
1906. *Dosinia sieboldi* Owston, Japan. Loochooan Shells, p. 38.

RÖMER's detailed description of *D.* (*A.*) *sieboldi* agrees with the shells which I refer to this species. The concentric sculpture on the posterior third of the valves is more or less prominent and the ridges in the region of the posterior keel differ in being moderately to strongly lamellose.

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1) DALL, W. H. — op. cit., p. 347 (1902).

Distribution: — *D.* (*A.*) *sieboldi* has so far been recorded from the Japanese waters.

The "Siboga" shells, which I refer to this species, were collected at the Anchorage off Djangkar, Java (St. 4) and Macassar (St. 71).

2. *Dosinia* (*Austrodosinia*) *histrio* (Gmelin).

1784. *Venus exoleta variegata* etc. Chemnitz, Conch.-Cab. VII, pp. 4, 23. pl. XXXVIII. fig. 407.
1788. *Venus exoleta variegata* Schröter, Conch.-Cab. Namen. Reg., p. 112.
1790. *Venus Histrio* Gmelin, Syst. Nat., (ed. XIII) p. 3387.
1797. Bruguière, Encyclopéd. Méthod., pl. CCLXXX, figs. 1*a*, *b*.
1798. *Cytherea Obsoleta* Röding, Mus. Boltenianum, p. 178.
1802. *Venus histrio* Bosc, Hist. Nat. Coq., III, p. 64.
1817. *Venus histrio* Dillwyn, Descr. Cat., I, p. 197.
1834. *Venus australis* Quoy & Gaimard (non Gmelin), Voy. "Astrolabe", III, p. 528, pl. LXXXIV, figs. 11, 12.
1838. *Venus australis* Gray, Analyst, VIII, p. 309.
1843. *Cytherea Histrio* Hanley, Reć. Biv. Shells, p. 103.
1844. *Cytherea* (*Arthemis*) *australis* Philippi (non Gmelin), Abbild. Beschreib. Conch., I, p. 172.
1845. *Cytherea histrio* Catlow & Reeve, Conch. Nomencl., p. 38.
1850. *Artemis variegata* Reeve, Conch. Icon., VI, *Artemis*, pl. VI, figs. 33*a*—*c*.
1852. *Artemis variegata* Sowerby, Thes. Conch., II, p. 675, pl. CLXIV, fig. 81.
1853. *Dosinia variegata* Mörch. Cat. Yoldi, II, p. 29.
1856. *Venus histrio* Hanley in Wood, Ind. Test., p. 49, pl. VIII, fig. 86.
1857. *Venus histrio* Römer, Krit. Unters., p. 102.
1857. *Dosinia variegata* Adams, H, & A., Gen. Rec. Moll., II, p. 432.
1858. *Dosinia variegata* Fischer, P., Journ. Conchyliol., VII, p. 337.
1860. *Artemis variegata* Reeve, Elem. Conch, II, p. 112.
1862. *Dosinia histrio* Römer, Mon. Dosinia, p. 33, pl. VI, figs. 2, 3.
1869. *Dosinia histrio* Pfeiffer in Martini & Chemn., Conch.-Cab. (N. F.), XI, (I), *Veneracea*, p. 95, pl. IX, fig. 9.
1869. *Dosinia scabra* Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 233.
1870. *Dosinia variegata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1880. *Artemis histrio* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 325.
1882. *Dosinia histrio* Dunker, Ind. Moll. Mar. Japon., p. 204.
1884. *Dosinia histrio* Smith, Rept. Voy. "Alert", p. 96.
1890. *Dosinia histrio* and var. *Scabra* Peatel, Cat. Conch. Samm., III, p. 90.
1895. *Dosinia histrio* Pilsbry, Cat. Mar. Moll. Japan, p. 126.
1896. *Dosinia variegata* Casto de Elera, Cat. Sist. Filip., p. 761.
1898. *Dosinia histrio* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 47.
1899. *Dosinia histrio* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 194.
1901. *Dosinia histrio* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math. Nat., LXIX, p. 282.
1902. *Dosinia histrio* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1903. *Dosinia variegata* Pritchard & Gatliff, Proc. Roy. Soc. Victoria, XVI, p. 133.
1903. *Dosinia Histrio* Hidalgo, Obras Malacol., II, p. 314.
1905. *Dosinia Histrio* Hidalgo, Cat. Filip., p. 340.
1906. *Dosinia histrio* Owston, Japan. Loochooan Shells, p. 38.
1906. *Dosinia histrio* Standen & Leicester, Ceylon Pearl Oyster Rept., V. p. 293.
1906. *Dosinia histrio* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 465.
1906. *Dosinia histrio* Melvill & Standen, Proc. Zool. Soc. London, p. 835.
1910. *Dosinia histrio* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1911. *Dosinia histrio* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVII, p. 132.
1928. *Dosinia histrio* Faustino, Summary Philippine Mar. Freshw. Moll., p. 66.
1930. *Dosinia histrio* Dautzenberg, Faun. Colon. Français., III, p. 600.

A number of dead, young valves of this wide-spread Indo-Pacific species were collected by the "Siboga" Expedition at Sailus Ketjil, Paternoster Islands (St. 37), in the Bay of Bima (St. 47), Western Entrance Samau Strait (St. 59) and Kambaragi Bay, Tanah Djampeah (St. 64).

Shells of *D.* (*A.*) *histrio* vary in sculpture; the concentric ridges are generally moderately raised and sharp, but in older and worn shells these appear only slightly raised above the general surface. The interspaces are very broad and regular.

3. *Dosinia* (*Austrodosinia*) *conglobata* Römer. (Plate VI, Figs. 17—20).

1862. *Dosinia conglobata* Römer, Malakozool. Blätt., VII, p. 211.
1862. *Dosinia conglobata* Römer, Mon. Dosinia, p. 39, pl. VII, figs. 2, *2a*, *b*.
1890. *Dosinia conglobata* Paetel, Cat. Conch. Samm., III, p. 89.

A single shell collected at Macassar (St. 71) agrees so very closely with the description and figures of *Dosinia* (*Austrodosinia*) *conglobata* Römer, that I have no hesitation in referring it to this species of hirtherto unknown habitat.

The measurements of this almost circular shell are: — length 36.7 mm., height 36.6 mm., thickness 21 mm. I figure the shell.

4. *Dosinia* (*Austrodosinia*) *amphidesmoides* (Reeve).

1850. *Artemis Amphidesmoides* Reeve, Conch. Icon., VI, *Artemis*, pl. VIII, figs. 48*a*, *b*.
1851. *Artemis amphidesmoides* Sowerby, Thes. Conch., II, p. 659, pl. CXLI, figs. 17—19.
1853. *Dosinia amphidesmoides* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc.. p. 12.
1857. *Dosinia amphidesmoides* Adams, H. & A., Gen. Rec. Moll., II, p. 431.
1860. *Artemis Amphidesmoides* Reeve, Elem. Conch., II, p. 112.
1862. *Dosinia amphidesmoides* Römer, Mon. Dosinia, p. 36, pl. VI, fig. 7.
1890. *Dosinia amphidesmoides* Paetel, Cat. Conch. Samm.,. p. 89.
1896. *Dosinia amphidesmoides* Casto de Elera, Cat. Sist. Filip., p. 759.
1903. *Dosinia Amphidesmoides* Hidalgo, Obras Malacol., II, p. 317.
1905. *Dosinia Amphidesmoides* Hidalgo, Cat. Filip., p. 339.
1906. *Dosinia amphidesmoides* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 465.
1910. *Dosinia amphidesmoides* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1928. *Dosinia amphidesmoides* Faustino, Summary Philippine Mar. Freshw. Moll., p. 66.

The suborbicular shell of *D.* (*A.*) *amphidesmoides* is not very tumid, and the umbones also are not very prominent. The sculpture consists of very regular concentric striae, and though the striae are almost sharp and ridge-like near the posterior margin, there is no tendency for their becoming lamellose. The odd valves in the "Siboga" collection are all bleached white.

Distribution: — *D.* (*A.*) *amphidesmoides* has been recorded from the Philippines and from round Queensland in the Australian waters.

The "Siboga" Expedition collected four odd valves of the species in the Bay of Badjo, west coast of Flores (St. 50).

5. *Dosinia* (*Austrodosinia*) *pubescens* (Philippi).

1847. *Cytherea pubescens* Philippi, Abbild. Beschreib. Conch., III, p. 24, *Cytherea*, pl. VIII, fig. 3.
1850. *Artemis caelata* Reeve, Conch. Icon., VI, *Artemis*, pl. V, fig. 28.
1851. *Artemis pnbescens* Sowerby, Thes. Conch., II, p. 672, pl. CLXIII, fig. 72.
1853. *Dosinia pubescens* Deshayes, Cat. Conch. Brit. Mus.. I, *Veneridae*, etc., p. 15.

1857. *Dosinia pubescens* Adams, H. & A., Gen. Rec. Moll., II, p. 432.
1860. *Artemis pubescens* Reeve, Elem. Conch., p. 112.
1862. *Dosinia pubescens* Römer, Mon. Dosinia, p. 79, pl. XV, fig. 1.
1869. *Dosinia Caelata* Dunker, Cat. Mus. Godeffroy, IV, p. III.
1884. *Dosinia pubescens* Grasset, Ind. Test. Viv., p. 268.
1890. *Dosinia pubescens* Paetel, Cat. Conch. Samm., III, p. 91.
1891. *Dosinia pubescens* Smith, Proc. Zool. Soc. London, p. 421.
1893. *Dosinia pubescens* Melvill & Abercrombie Mem. Proc. Manchester Lit. Phil. Soc., (4) VII, p. 29.
1896. *Dosinia pubescens* Casto de Elera, Cat. Sist. Filip., p. 761.
1902. *Dosinia pubescens* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1903. *Dosinia pubescens* Hidalgo, Obras Malacol., II, p. 307.
1905. *Dosinia pabescens* Hidalgo, Cat. Filip., p. 341.
1906. *Dosinia pubescens* Melvill & Standen, Proc. Zool. Soc. London, p. 835.
1909. *Dosinia pubescens* Lamy, Mém. Soc. Zool. France, XXII, p. 346.
1909. *Dosinia pubescens* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 251.
1928. *Dosinia pubescens* Faustino, Summary Philippine Mar. Freshw. Moll., p. 67.
1930. *Dosinia pubescens* Dautzenberg, Faun. Colon. Français., IV, p. 600.

I refer four young odd valves collected in the Bay of Bima (St. 47) to *D.* (*A.*) *pubescens*. These young shells have a finer concentric sculpture than is present on young shells of the species from Aden in the British Museum (Nat. Hist.), London. The following species were rightly included by SMITH in its synonymy: — *D.* (*A.*) *scabriuscula* (Reeve non Philippi), *D.* (*A.*) *ovalis* Römer, *D.* (*A.*) *eunice* A. Adams and *D.* (*A.*) *biscocta* (Reeve).

Distribution: — *D.* (*A.*) *pubescens* is widely distributed in the Indo-Pacific. A list of its records is published in LYNGE's paper cited above.

In the "Siboga" collection it is represented by four valves collected in the Bay of Bima (St. 47).

6. *Dosinia* (*Austrodosinia*) sp.

A single left valve collected in the Madura Strait (St. 2) appears to be a half-grown shell of *D.* (*A.*) *exasperata* (Philippi)[1]. This single valve is, however, a little subquadrate rather than orbicular; the postero-dorsal margin is only slightly arcuate and almost distinctly marked off from the posterior border. The ventral margin is also not so strongly arched and the sculpture is less coarse.

Genus **Antigona** Schumacher.

1817. *Antigona* Schumacher, Essai Nouv. Syst., pp. 51, 154.
1853. *Omphaloclathrum* Mörch, Cat. Yoldi, II, p. 25.
1857. *Venus* Adams, H. & A., (non Linn.), Gen. Rec. Moll., II, p. 417.
1887. *Callista* Fischer, P., (non Mörch), Man. Conchyliol., p. 1084.
1902. *Antigona* Dall, Proc. U.S. Nat. Mus., XXVI, p. 355.
1903. *Cytherea* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1271.
1914. *Antigona* Jukes-Browne, Proc. Malacol. Soc. London, XI, p. 70.
1925. *Antigona* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 157.
1927. *Antigona* Cox, Rept. Palaeontol. Zanzibar, p. 55.

I agree with Cox that the group of *Venus puerpera* Linn. should be included in the genus *Antigona* Schumacher; this group was designated as *Cytherea s. s.*, by DALL and given the new generic name *Periglypta* by JUKES-BROWNE (op. cit., p. 72). I am, however, of opinion that the group, though well defined, does not merit separation into a distinct genus or subgenus. The genotype of *Antigona* is *Antigona lamellaris* Schumacher.

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[1] PHILIPPI, R. A. — Abbild. Beschreib. Conch., III, p. 24, *Cytherea*, pl. VIII, fig. 4 (1847). I do not agree with RÖMER, — Mon. Dosinia, p. 27 (1862), that *D.* (*A.*) *exasperata* is based on young shells of *D.* (*A.*) *prostrata* (Linn.).

A second subgenus represented in the "Siboga" collection is *Clausina* Brown 1) — type *Antigona* (*Clausina*) *verrucosa* (Linn.).

1. *Antigona lamellaris* Schumacher.

1782. *Venus cancellata* var., Chemnitz, Conch.-Cab., VI, p. 310, pl. XXIX, figs. 306, 307.
1788. *Venus cancellata* Schröter. (non Linn.), Conch.-Cab. Namen Reg., p. 112.
1797. *Antigona lamellaris* Schumacher, Essai Nouv. Syst., p. 155, pl. XIV, figs. 2, 2*a*.
1818. *Venus reticulata* var. Q, Lamarck, Anim. sans Vertèb., V, p. 585.
1838. *Dosinia Lamarckii* Gray, Analyst, VIII, p. 308.
1841. *Venus subrostrata* Reeve, (non Lamarck), Conch. Syst., p. 93, pl. LXVIII, fig. 4.
1843. *Venus Lamarckii* Hanley, Rec. Biv. Shells, p. 113.
1845. *Venus Lamarckii* Catlow & Reeve, Conch. Nomencl., p. 34.
1847. *Venus reticulata* Chenu, (ex parte, non Linn.), Illustr. Conchyliol., *Venus*, pl. IV, figs. 2, 2*a*, *b*.
1853. *Venus Lamarckii* and *V. nodulosa* Sowerby, Thes. Conch., II, p. 707, pl. CLIII, figs. 20, 21; p. 708, pl. CLIII, fig. 16.
1853. *Venus Lamarckii* and *V. nodulosa* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 110.
1853. *Omphaloclathrum lamellaris* Mörch, Cat. Yoldi, II, p. 24.
1857. *Venus lamellaris* and *V. nodulosa* Adams, H. & A., Gen. Rec. Moll., II, p. 418.
1860. *Venus Lamarckii* Reeve, Elem. Conch., II, p. 110.
1863. *Venus Lamarckii* Reeve, Conch. Icon., XIV, *Venus*, pl. XII, figs. 39*a*, *b*.
1867. *Venns Lamarckii* Mitchell, Cat. Mus. Madras, p. 64.
1867. *Venus* (*Chione-Omphaloclathrum*) *Lamarckii* Römer, Malakozool. Blätt., XIV, p. 39.
1868. *Venus lamellaris* Pfeiffer in Martini-Chemn., Conch.-Cab. (N.F.), XI (I) *Veneracea*, p. 14, pl. VIII, figs. 10, 11.
1869. *Venus lamellaris* Adams, A., Ann. Mag. Nat. Hist. (4) III, p. 229.
1874. *Venus lamellaris* Dunker, Cat. Mus. Godeffroy, V, p. 168.
1882. *Venus lamellaris* Dunker, Ind. Moll. Mar. Japon., p. 196.
1884. *Venus lamellaris* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 799.
1884. *Venus lamellaris* Grasset, Ind. Test. Viv., p. 262.
1884. *Venus lamellaris* Smith, Rept. Voy. "Alert", p. 93.
1885. *Venns* (*Antigona*) *lamellaris* Smith, „Challenger" *Lamellibranchia.*, p. 121.
1886. *Chione* (*Omphaloclathrum*) *Lamarckii* Paetel, Cat. Conch. Samm., III, p. 85.
1892. *Chione lamellaris* Crosse & Fischer, P., Journ. Conchyliol., XL, p. 76.
1895. *Venus lamellaris* Pilsbry, Cat. Mar. Moll. Japan, p. 127.
1896. *Chione lamarcki* Casto de Elera, Cat. Sist. Filip., p 757.
1899. *Chione* (*Omphaloclathrum*) *Lamarckii* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 196.
1902. *Chione Lamarckii* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1906. *Cytherea lamellaris* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1906. *Chione* (*Omphaloclathrum*) *lamarcki* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 293.
1906. *Venus lamellaris* Owston, Japan, Loochooan Shells, p. 38.
1906. *Chione Lamarcki* Melvill & Standen, Proc. Zool. Soc. London, p. 834.
1909. *Chione* (*Antigona*) *lamellaris* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 245.
1909. *Venus* (*Chione*) *lamarckii* Melvill, Trans. Linn. Soc. London (Zool.) XIII, p. 132.

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1) BROWN, T. — Illustr Conch. Great Britain, Ireland, explanation pl. XIX, fig. 11 (1827).

1910. *Cytherea lamellaris* Hedley, Austral. Ass. Adv. Sci. XII, p. 348.
1916. *Antigona lamellaris* Hedley, Journ. Proc. Roy. Soc. West Australia, I, p. 165.
1918. *Antigona lamellaris* Hedley, Journ. Proc. Roy. Soc. N. S. Wales, LI, p. 23.

I agree with SMITH that *Dosinia lamarckii* Gray, *Venus subrostrata* Reeve (non Lam.) and *V. nodulosa* Sowerby are synonyms of *Antigona lamellaris* Schumacher.

Distribution: — *A. lamellaris* has a wide range in the Indo-Pacific Region. A list of its records was published by LYNGE.

In the "Siboga" collection there are two shells of the species dredged at St. 164 (1° 42′.5 S., 130° 47′.5 E.; 32 metres).

2. *Antigona puerpera* (Linn.).

1685. *Pectunculus cancellatus minor* Lister, Hist. Conch., pl. CCCXXXVI, fig. 173.
1742. *Concha marina* etc. Gualtieri, Ind. Test., pl. LXXVI, figs. G. G.
1742. *Cordiforme reticulatum* etc., d'Argenville, La Conch., pp., 294, 298, pl. XXVI, fig. F.
1771. *Venus puerpera* Linnaeus, Mantissa, p. 545.
1773. *Came à reseau* Knorr, Délices Yeux, VI, p. 18, pl. X, fig. 1.
1780. *Venus reticulata* Born, (nec. Linn.), Test. Mus. Caes. Vindobon., p. 69.
1782. *Venus Puerpera Linnaei* Chemnitz, Conch.-Cab., VI, p. 372. pl. XXXVI, figs. 388, 389.
1788. *Venus puerpera* Schröter, Conch.-Cab. Namen Reg., p. 112.
1790. *Venus Puerpera* Gmelin, Syst. Nat. (ed. XIII), p. 3276.
1797. Bruguière, Encyclopéd. Méthod., pl. CCLXXVIII, figs. 1*a*, *b*.
1798. *Cytherea puerpera* Röding, Mus. Boltenianum, p. 179.
1802. *Venus puerpera* Bosc, Hist. Nat. Coq., III, p. 51.
1817. *Venus puerpera* Dillwyn, Descr. Cat., I, p. 188.
1818. *Venus puerpera* Lamarck, Anim. sans Vertèb., V, p. 584.
1824. *Venus puerpera* Dubois, Epitome, pp. 71, 72.
1825. *Venus puerpera* Blainville, Man. Malacol., p. 587, pl. LXXV, fig. 3.
1825. *Venus puerpera* Sowerby, Cat. Tankerville, p. 14.
1828. *Venus puerpera* Blainville, Dict. Sci. Nat., LVII, p. 286, pl. CV, fig. 3.
1830. *Venus puerpera* Sowerby, Gen. Shells, I, *Venus* pl. II, figs. 1, 1.
1832. *Venus puerpera* Deshayes, Encyclopéd. Méthod., III, p. 1112.
1835. *Venus puerpera* Deshayes in Lamarck Anim. sans Vertèb., VI, p. 333.
1838. *Dosinia puerpera* Gray, Analyst, VIII, p. 308.
1840. *Venus puerpera* Pfeiffer, Krit. Reg., p. 64.
1841. *Venus puerpera* Reeve, Conch. Syst., I, p. 92, pl. LXVII, figs. 1, 1.
1841. *Venus puerpera* Sganzin, Cat. Coq. Ile de France, etc., p. 7.
1843. *Venus puerpera* Hanley, Rec. Biv. Shells, p. 109.
1844. *Venus puerpera* Potiez & Michaud, Gal. Douai, II, p. 231.
1845. *Venus puerpera* Catlow & Reeve, Conch. Nomencl., p. 35.
1847. *Venus puerpera* Chenu, Illustr. Conchyliol., *Venus*, pl. IV, figs. 3, 3*a*, *b*, 4, 4*a*, *b*, 5, 5*a*, *b*.
1855. *Venus puerpera* Sowerby, Thes. Conch., II, p. 703, pl. CLII, figs. 1, 2.
1853. *Venus puerpera* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* ect., p. 104.
1853. *Omphaloclathrum puerpera* Mörch, Cat. Yoldi, II. p. 25.
1855. *Venus puerpera* Berge, Conchylienbuch, p. 58.
1855. *Venus Puerpera* Hanley, Ipsa Linn. Conch., p. 453.
1857. *Venus* (*Murcia-Antigona*) *puerpera* Römer, Krit. Untersuch., pp. 16, 57.
1857. *Venus puerpera* Adams, H. & A., Gen. Rec. Moll., II, p. 418.
1858. *Venus puerpera* Fischer, P., Journ. Conchyliol., VIII, p. 337.
1860. *Venus puerpera* Reeve, Elem. Conch., II, p. 110.
1862. *Venus puerpera* Chenu, Man. Conchyliol., II, p. 82, figs. 351—354.
1863. *Venus puerpera* Reeve, Conch. Icon., XIV, *Venus*, pl. IV, fig. 10.

1867. *Venus* (*Chione-Omphaloclathrum*) *puerpera* Römer, Malakozool. Blätt., XIV, p. 30.
1867. *Venus puerpera* Mitchell, Cat. Mus. Madras, p. 64.
1869. *Venus puerpera* Dunker, Cat. Mus. Godeffroy, IV, p. 109.
1869. *Venus puerpera* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (1), *Veneracea*, p. 145, pl. X, figs. 4, 5.
1879. *Venus puerpera* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 744.
1880. *Venus* (*Antigona*) *puerpera* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 326.
1881. *Venus puerpera* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 15.
1884. *Venus puerpera* Tryon, Struct. Syst. Conch., III, p. 176, pl. CXIII, fig. 9.
1884. *Venus puerpera* Grasset, Ind. Test. Viv., p. 262.
1885. *Venus* (*Antigona*) *puerpera* Smith. "Challenger" Lamellibranchia, p. 120.
1887. *Venus* (*Chione-Omphaloclathrum*) *puerpera* Fischer, P., Man. Conchyliol., p. 1084.
1890. *Chione* (*Omphaloclathrum*) *puerpera* Paetel, Cat. Conch. Samm., III, p. 153.
1891. *Venus puerpera* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 233.
1896. *Venus puerpera* Casto de Elera, Cat. Sist. Filip., p. 757.
1898. *Chione* (*Omphaloclathrum*) *puerpera* Melvill & Standen, Journ. Conch., IX, p. 83.
1903. *Venus puerpera* Hidalgo, Obras Malacol., II, p. 279.
1905. *Venus puerpera* Hidalgo, Cat. Filip., p. 337.
1906. *Venus puerpera* Owston, Japan. Loochooan Shells, p. 38.
1909. *Venus* (*Omphaloclatrum*) *puerpera* Lamy, Mém. Soc. Zool. France, XXII, p. 346.
1910. *Cytherea puerpera* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1911. *Venus* (*Antigona*) *puerpera* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 163.
1911. *Venus puerpera* Pelseneer, "Siboga" Lamellibranches (Anat.) p. 53.
1927. *Antigona puerpera* Cox, Rep. Palaeontol. Zanzibar, p. 100.
1928. *Venus puerpera* Faustino, Summary Philippine Mar. Freshw. Moll., p. 69.
1929. *Chione puerpera* Dautzenberg, Faun. Colon. Français., III, p. 602.

Antigona puerpera is a very variable species and though at first I was inclined to consider *Venus lacerta* Hanley [1]), *Venus aegrota* Reeve [2]) and probably *Venus magnifica* Hanley [3]) as distinct from it, I have, after a careful examination of the large collections in the British Museum (Nat. Hist.), London, come to the conclusions that all of these so-called species are based on slight individual variations of *A. puerpera*. The species has been well defined by Cox in his recent memoir cited above.

Distribution: — *A. puerpera* is a wide spread Indo-Pacific species.

In the "Siboga" collection there are shells of this species from the Bay of Bima (St. 47), Lamakera, Solor Island (St. 61), Anchorage off Beo, Karakelang Islands (St. 131), Anchorage off Laiwui, coast of Obi Major (St. 142), west side of Taam Island (St. 252), Dobo, Aru Islands (St. 272) and Sapeh Bay, east coast of Sumbawa (St. 311).

3. *Antigona reticulata* (Linn.).

1685. *Pectunculus gravis* etc., Lister, Hist. Conch., pl. CCCXXXV, fig. 172.
1742. *Concha Cordiformis* etc., Gualtieri, Ind. Test., pl. LXXXIII, figs. F. F.
1753. *Omphaloclathrum Bengalensis* etc., Klein, Tent. Meth. Ostracol., p. 148, pl. X, fig. 52.
1758. *Venus reticulata* Linnaeus, Syst. Nat., (ed. X), p. 687.
1764. *Venus reticulata* Linnaeus, Mus. Lud. Ulr., p. 503.

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1) Hanley, S. — Proc. Zool. Soc. London (volume for 1844), p. 161 (1845) and Reeve, L., Conch. Icon., XIV, *Venus*, pl. VI, fig. 18 (1863).

2) Reeve, L. — Op. cit., pl. XVII, fig. 74 (1863).

3) Hanley, S. — Proc. Zool. Soc. London, p. 21 (1845) and Reeve, L., op. cit., pl. V, fig. 17 (1863).

1767. *Venus reticulata* Linnaeus, Syst. Nat., (ed. XII), p. 1133.
1780. *Venus reticulata* Born, Test. Mus. Caes. Vindobon., p. 69.
1782. *Venus reticulata Linnaei* Chemnitz, Conch.-Cab., VI, p. 367, pl. XXXVI, figs. 382, 383.
1788. *Venus reticulata* Schröter, Conch.-Cab. Namen Reg., p. 112.
1790. *Venus reticulata* Gmelin, Syst. Nat., (ed. XIII), p. 3275.
1797. Bruguière, Encycloped. Méthod., pl. CCLXXVI, figs. 4*a*—*c*.
1797. *Pectunculus reticulatus* Humphrey, Mus. Calonnianum, p. 48.
1798. *Gafrarium tellina* and *G. reticula* (ex parte), Röding, Mus. Bolteniannm, p. 177.
1802. *Venus reticulata* Bosc, Hist. Nat. Coq., III, p. 50.
1817. *Venus reticulata* Dillwyn, Descr. Cat. I, p. 188.
1818. *Venus corbis* Lamarck, Anim. sans Vertèb., p. 585.
1824. *Venus corbis* Dubois, Epitome, p. 72.
1825. *Venus Corbis* Blainville, Man. Malacol., p. 557, pl. LXXV, fig. 2.
1825. *Venus reticulata* and *V. corbis* Sowerby, Cat. Tankerville, p. 14.
1828. *Venus corbis* Blainville, Dict. Sci. Nat., LVII, p. 283, pl. CV, fig. 2.
1832. *Venus corbis* Deshayes, Encycloped. Méthod., III, p. 1113.
1835. *Venus corbis* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 337.
1838. *Dosinia reticulata* Gray, Analyst, VIII, p. 308.
1842. *Venus Reticulata* Hanley, Rec. Biv. Shells, p. 110; Supplement (1856), pl. XVI, fig. 9.
1845. *Venus reticulata* Catlow & Reeve, Conch. Nomencl., p. 35.
1847. *Venus corbis* and *V. reticulata* Chenu, Illustr. Conchyliol., *Venus* pl. 1, figs. 1, 1*a*, *b*, 2, 2*a*, *b*; pl. IV, figs. 1, 1*a*, *b*.
1853. *Venus reticulata* Sowerby, Thes. Conch., II, p. 706, pl. CLIII, figs. 11—13.
1853. *Venus reticulata* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc. p. 108.
1853. *Omphaloclathrum reticulata* Mörch, Cat. Yoldi, II, p. 25.
1855. *Venus reticulata* Berge, Conchylienbuch, p. 58.
1855. *Venus reticulata* Hanley, Ipsa Linn. Conch., p. 72.
1857. *Venus* (*Murcia-Antigona*) *reticulata* Römer, Krit. Untersuch., p. 54.
1857. *Venus reticulata* Adams, H. & A., Gen. Rec. Moll., II, p. 418.
1858. *Venus reticulata* Fischer, P., Journ. Conchyliol., LVII, p. 337.
1860. *Venus reticulata* Reeve, Elem. Conch., II, p. 110.
1862. *Venus reticulata* Chenu, Man. Conchyliol., II, p. 82, fig. 355.
1863. *Venus reticulata* Reeve, Conch. Icon., XIV, *Venus*, pl. X, fig. 34.
1867. *Venus* (*Chione-Omphaloclathrum*) *reticulata* Römer, Malakozool. Blatt., XIV, p. 36.
1867. *Venus reticulata* Mitchell, Cat. Mus. Madras, p. 64.
1869. *Venus reticulata* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI, (1), *Veneracea*, p. 143. pl. X, figs. 1, 2.
1869. *Venus reticulata* Dunker, Cat. Mus. Godeffroy, IV, p. 108.
1869. *Venus reticulata* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 881.
1860. *Venus reticulata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 446.
1877. *Venus reticulata* Pagenstecher, Zool. Ergebn. Reise Rothenmeer. Moll., p. 41.
1878. *Venus* (*Omphaloclathrum*) *reticulata* Kobelt, Illustr. Conchylienbuch, p. 338, pl. XCIX, fig. 5.
1880. *Venus reticulata* Dunker, Ind. Moll. Mar. Japon., p. 196.
1884. *Venus reticulata* Grasset, Ind. Test. Viv., p. 262.
1886. *Venus reticulata* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 102.
1887. *Venus* (*Antigona*) *reticulata* von Martens, Journ. Linn. Soc. London, (Zool.), XXI, p. 212.
1888. *Venus reticulata* Jousseaume, Mém. Soc. Zool. France, I, p. 209.
1889. *Venus corbis* Morlet, Journ. Conchyliol., XXXVII, p. 170.
1890. *Chione* (*Omphaloclathrum*) *reticulata* Paetel, Cat. Conch. Samm., III, p. 87.
1891. *Venus corbis* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 233.
1891. *Venus reticulata* Smith, Proc. Zool. Soc. London, p. 424.
1895. *Venus reticulata* Pilsbry, Cat. Mar. Moll. Japan, p. 177.
1896. *Chione reticulata* Casto de Elera, Cat. Sist. Filip., p. 755.
1900. *Venus reticulata* Newton, Geol. Mag., (4) VII, p. 553, pl. XXI, fig. 2.
1901. *Chione reticulata* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math. Nat., LXIX, p. 281.

1903. *Venus reticulata* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 625.
1903. *Venus reticulata* Hidalgo, Obras Malacol., II, p. 286.
1905. *Venus reticulata* Hidalgo, Cat. Filip., p. 337.
1906. *Venus reticulata* Owston, Japan. Loochooan Shells, p. 38.
1906. *Chione (Omphaloclathrum) reticulata* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 293.
1906. *Cytherea reticulata* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1909. *Chione reticulata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 246.
1910. *Cytherea reticulata* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1911. *Venus reticulata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 53.
1927. *Antigona reticulata* Cox, Rept. Palaeontol. Zanzibar, p. 100.
1928. *Venus reticulata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 69.
1929. *Chione reticulata* Dautzenberg, Faun. Colon. Français., III, p. 602.

There has been a certain amount of confusion in reference to *Venus reticulata* of LINNAEUS, and authors like WOOD and LAMARCK have described or figured other species under this name. I adopt REEVE's figure 34 in "Conch. Icon." as that of the typical *reticulata*, and this agrees fairly well with LISTER's and GUALTIERI's figures. The species has been described in detail in COX's recent memoir cited above.

I also agree with Mr. J. R. LE B. TOMLIN that *Venus monolifera* Sowerby[1]) from the Island of Mindoro, Philippines is a synonym of this species.

Distribution: — *A. reticulata* is a wide-spread Indo-Pacific species. A detailed list of its records was published by LYNGE.

In the "Siboga" collections the species is represented from the Anchorage off Seba, Savu (St. 58), Pulu Sebangkatan, Borneo Bank (St. 81), Muaras Reef, east coast of Borneo (St. 91), Anchorage off Beo, Karakelang Islands (St. 131), Anchorage off Kampong Kelang, south coast of Manipa Island (St. 184), Anchorage off Kilsuin, west coast of Kur Island (St. 250) and Buka or Cyrus Bay, south coast of Rotti Island (St. 299).

4. *Antigona* (*Clausina*) *toreuma* (Gould).

1846. *Venus toreuma* Gould, Exped. Shells, p. 84.
1850. *Venus toreuma* Gould, Proc. Boston Soc. Nat. Hist., III, p. 277.
1852. *Venus toreuma* Gould, United States Expl. Exped., p. 419, pl. XXXVII, figs. 537, 537*a*.
1853. *Venus Jukesi* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 100.
1853. *Venus crebrisulca* (nec Lamarck), Sowerby, Thes. Conch., II, p. 728, pl. CLXI, figs. 187–189.
1857. *Venus Jukesi* Adams, H. & A., Gen. Rec. Moll., II, p. 418.
1862. *Venus toreuma* Gould, Otia Conch., p. 84.
1863. *Venus sculpta* and *V. toreuma* Reeve, Conch. Icon., XIV, *Venus*, pl. II, fig. 5; pl. XVI, figs. 64*a*, *b*.
1867. *Chione* (*Ventricola*) *Jukesi* Römer, Malakozool. Blätt., XII, p. 123.
1868. *Venus Jukesi* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (1), *Veneracea*, p. 217, pl. XXXV, figs. 7—9.
1869. *Venus toreuma* Lischke, Japan. Meeresconch., I, p. 121.
1869. *Venus toreuma* Adams, A., Ann. Mag. Nat Hist., (4) III, p. 229.
1871. *Venus toreuma* Lischke, Japan. Meeresconch., II p. 108.
1877. ? *Venus toreuma* Lienard, Cat. Ile Maurice, p. 63.
1880. *Venus* (*Ventricula* sic) *toreuma* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 326.

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[1]) SOWERBY, G. B. — Thes. Conch., II, p. 707, pl. CLIII, fig. 19 (1853) and REEVE, L., Conch. Icon., XIV, *Venus*, pl. XIV, fig. 53 (1863).

1882. *Venus toreuma* Dunker, Ind. Moll. Mar. Japon., p. 196.
1884. *Venus toreuma* Grasset, Ind. Test. Viv., p. 263.
1884. *Venus toreuma* Smith, Rept. Voy. „Alert", p. 93.
1890. *Chione* (*Chamelaea*) *Jukesi* and *Chione* (*Omphaloclathrum*) *toreuma* Paetel, Cat. Conch. Samm., III, pp. 86, 88.
1899. *Venus toreuma* Hedley, Mem. Austral. Mus., III, pp. 501, 529.
1899. *Chione* (*Omphaloclathrum*) *toreuma* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 196.
1903. *Venus toreuma* Smith, Faun. Geogr. Maldive Laccadive Archipel., II, p. 625.
1903. *Venus tourema* (sic) Hidalgo, Obras Malacol., II, p. 288.
1905. *Venus tourema* (sic) Hidalgo. Cat. Filip., p. 337.
1906. *Chione toreuma* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1905. *Venus toreuma* Owston, Japan. Loochooan Shells, p. 38.
1909. *Venus* (*Ventricola*) *toreuma* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 247.
1909. *Venus* (*Omphaloclathrum*) *toreuma* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 133.
1910. *Cytherea toreuma* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1911. *Venus toreuma* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 52, 53, pl. XIX, fig. 5.
1916. *Antigona toreuma* Hedley, Journ. Proc. Roy. Soc. West Australia, I, p. 165.
1928. *Venus jukesi* and *V. toreuma* Faustino, Summary Philippine Mar. Freshw. Moll., pp. 69, 70.
1929. *Chione toreuma* Dautzenberg, Faun. Colon. Français., III, p. 603.

I have examined the types of *Venus jukesi* Deshayes, and can find no differences between these and typical shells of *A.* (*C.*) *toreuma*.

Distribution: — *A.* (*C.*) *toreuma* is a wide spread Indo-Pacific species. A list of previous records of this form was published by Lynge.

In the "Siboga" collection it is represented by a few young shells from the Bay of Badjo, west coast of Flores (St. 50), Bank between the islands of Bahuluwang and Tambolungan, south of Saleyer (St. 66), St. 164 (1° 42'.5 S., 130° 47'.5 E.) and Ruma Kuda Bay, Roma Island (St. 279).

Genus **Chione** Megerle.

1811. *Chione* Megerle, Mag. Ges. Naturf. Freunde Berlin, V, p. 51.
1857. *Chione* Adams, H. & A., Gen. Rec. Moll., II, p. 420.
1857. *Anaitis* Römer, (ex parte), Krit. Untersuch., p. 16.
1902. *Chione* Dall, Proc. U. S. Nat. Mus., XXVI, p. 357.
1903. *Chione* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1286.
1914. *Chione* Jukes-Browne, Proc. Malacol. Soc. London, XI, p. 79.
1925. *Chione* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 159.
1930. *Chione* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, IV, p. 220.

The genus *Chione* Megerle has been well defined recently by Woodring, and Stewart has discussed the question of its genotype; I agree with him that it is *Chione cancellata* (Linn.) based on *Venus dysira* Chemnitz.

Chione s. s., is not represented in the "Siboga" collection, but there are species of the subgenera *Timoclea* Brown 1), type — *Chione* (*Timoclea*) *ovata* (Pennant) and *Clausinella* Gray 2), type — *Chione* (*Clausinella*) *fasciata* Da Costa.

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1) Brown, T. — Illustr. Conch. Great Britain Ireland, Explanation, pl. XIX, fig. 11 (1827).
2) Gray, J. E. — List. Brit. Anim. Brit. Mus., pt. 7, p. 12 (1851). See also Dall, W. H., op. cit., p. 1288 (1903).

1. *Chione* (*Timoclea*) *marica* (Linnaeus).

1758. *Venus Marica* Linnaeus, Syst. Nat., (ed. X), p. 685.
1764. *Venus literata* Linnaeus, Mus. Lud. Ulr., p. 497.
1767. *Venus literata* Linnaeus, Syst. Nat., (ed. XII), p. 1130.
1782. *Venus Marica Linnaei* Chemnitz, Conch. Cab., VI, p. 292, pl. XXVII, figs. 282—284.
1788. *Venus Marica* Schröter, Conch. Cab. Namen Reg., p. 112.
1790. *Venus Marica* Gmelin, Syst. Nat., (ed. XIII), p. 3268.
1798. *Venus Marica* Röding, Mus. Boltenianum, p. 183.
1802. *Venus Marica* Bosc, Hist. Nat. Coq., III, p. 44.
1817. *Venus Marica* Dillwyn, Descr. Cat.,I, p. 160.
1818. *Venus marica* Lamarck, Anim. sans Vertèb., V. p. 589.
1824. *Venus marica* Dubois, Epitome, p. 73.
1825. *Venus Marica* Sowerby, Cat. Tankerville, p. 15.
1828. *Venus marica* Blainville, Dict. Sci. Nat., LVII, p. 285.
1832. *Venus marica* Deshayes, Encyclopéd. Méthod., III, p. 1116.
1835. *Venus marica* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 345.
1843. *Venus Marica* Hanley, Rec. Biv. Shells, p. 114.
1844. *Venus marica* Potiez & Michaud, Gal. Douai, II, p. 238.
1845. *Venus marica* Catlow & Reeve, Conch. Nomencl., p. 34.
1847. *Venus Marica* Chenu, Illustr. Conchyliol., *Venus*, pl. VIII, figs. 2, 2*a*, *b*.
1853. *Venus marica* Sowerby, Thes. Conch., II, p. 719, pl. CLVII, fig. 107—110.
1853. *Chione marica* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 129.
1855. *Venus Marica* Hanley, Ipsa Linn. Conch., p. 64.
1856. *Venus Marica* Hanley in Wood, Ind. Test., p. 42, pl. VII, fig. 5.
1857. *Venus* (*Marica*, *Leucoma*) *marica* Römer, Krit. Untersuch., pp. 17, 21.
1857. *Chione marica* Adams, H. & A., Gen. Rec. Moll., II. p. 421.
1858. *Venus marica* Fischer, P., Journ. Conchyliol., VII, p. 337.
1860. *Venus marica* Reeve, Elem. Conch., II, p. 110.
1863. *Venus Marica* Deshayes, Moll. Réunion, p. 12.
1863. *Venus Marica* Reeve (ex parte), Conch. Icon., XIV, *Venus*, pl. XXII, figs. 104*b*, *c*.
1867. *Venus* (*Chione-Omphaloclathrum*) *marica* Römer, Malakozool. Blätt., XIV, p. 55.
1868. *Venus Marica* Pfeiffer, Malakozool. Blätt., XV, p. 149.
1869. *Venus Marica* Pfeiffer in Martini-Chemn., Conch. Cab. (N. F.), XI (1), *Veneracea*, p. 134, pl. VIII, figs. 12—16.
1869. *Chione marica* Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 230.
1871. *Venus marica* Lischke, Japan. Meeresconch., II, p. 108.
1877. *Venus marica* Lienard, Cat. Ile Maurice, p. 63.
1877. *Chione marica* Dunker, Cat. Mus. Godeffroy, VI, p. 94.
1879. *Chione marica* Brazier, Proc. Linn. Soc. N. S. Wales, IV, p. 430.
1880. *Venus* (*Chione*) *marica* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 326.
1882. *Chione marica* Dunker, Ind. Moll. Mar. Japon., p. 197.
1884. *Venus marica* Grasset, Ind. Test. Viv., p. 262.
1885. *Venus* (*Chione*) *marica* Smith, "Challenger" Lamellibranchia., p. 125.
1890. *Chione* (*Omphaloclathrum*) *marica* Paetel, Cat. Conch. Samm., III, p. 87.
1892. *Venus* (*Chione*) *marica* Böttger, O., Nachrichtsbl. Deutsch. Malakozool. Ges., XXIV, p. 168.
1895. *Chione marica* Pilsbry, Cat. Mar. Moll. Japan, p. 128.
1899. *Chione* (*Omphaloclathrum*) *marica* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 196.
1903. *Venus marica* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 625.
1903. *Chione Marica* Hidalgo, Obras Malacol., II, p. 300.
1905. *Chione Marica* Hidalgo, Cat. Filip., p. 339.
1906. *Chione marica* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1906. *Chione marica* Melvill & Standen, Proc. Zool. Soc. London, p. 834.
1906. *Chione marica* Owston, Japan. Loochooan Shells, p. 39.

1909. *Venus* (*Chione*) *marica* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 132.
1909. *Chione* (*Omphaloclathrum*) *marica* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 242, pl. V, figs. 1—4.
1910. *Chione marica* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1910. *Chione marica* Dautzenberg, Journ. Conchyliol., LVIII, p. 31.
1911. *Venus* (*Chione*) *marica* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 133.
1916. *Chione marica* Hedley, Journ. Proc. Roy. Soc. West Australia, I, p. 165.
1918. *Antigona marica* Hedley, Journ. Proc. Roy. Soc. N. S. Wales, LI, p. M. 23.
1919. *Chione marica* Odhner, Arkiv Zool., N⁰ 6, p. 30.
1928. *Venus* (*Chione*) *marica* Faustino, Summary Philippine Mar. Freshw. Moll., p. 71.
1929. *Chione marica* Dautzenberg, Faun. Colon. Français., III, p. 602.

Venus marica Linnaeus is a puzzle. The description of the species is very incomplete, and even though it was supplemented by a few remarks of HANLEY, it is impossible to understand the species. The uncertainty in reference to its habitat is another source of confusion. LINNAEUS, CHEMNITZ, DILLWYN and PFEIFFER considered the species to be from the West Indies: HANLEY doubted this habitat, while DESHAYES, SOWERBY, REEVE, VON MARTENS, SMITH and later authors generally have adopted the name *marica* for the Indo-Pacific species. LYNGE tried to get over the difficulty by adopting the specific name *marica*, as of SOWERBY.

In the "Siboga" collection there are two stray valves of this species from the Bay of Bima (St. 47) and a complete shell from the Anchorage off Kawio and Kamboling Islands, Karkaralong Group (St. 129) which agree with shells figured by REEVE as *Venus marica* from the Philippines.

2. *Chione* (*Timoclea*) *mindanensis* Smith. (Plate VI, figs. 21, 22).

1885. *Venus* (*Chione*) *mindanensis* Smith, "Challenger" Lamellibranchia, p. 130, pl. III, figs. 4, 4*a*, *b*.
1896. *Chione mindanensis* Casto de Elera, Cat. Sist. Filip., p. 756.
1903. *Chione mindanensis* Hidalgo, Obras Malacol., II, p. 298.
1905. *Chione mindanensis* Hidalgo, Cat. Filip., p. 339.
1928. *Venus Chione mindanensis* Faustino, Summary Philippine Mar. Freshw Moll., p. 71.

SMITH's description of *Chione* (*Timoclea*) *mindanensis* is based on three worn valves. The sculpture of this beautiful species consists of a large number of radiating ridges, which lie fairly closely in the umbonal region, but become separated lower down; a few finer ridges are also intercalated between them. The concentric ridges are fairly thick; some of them on the anterior half of the shells are even thicker than the radials and by intersection with the radials become crenulated. The radials lie at a slightly lower level than the concentric ridges, and near the margins of the shell, owing to the numerous, closely packed, concentric striae are to be distinguished only as slight undulations between the latter. The "Siboga" shells are generally larger, the measurements of one of the shells are: length 9.8 mm., height 8.9 mm., diameter 5.4 mm. I figure one of the shells.

The "Siboga" shells of this species were dredged in the Bay of Bima (St. 47, 55 metres) Western Entrance Samau Strait (St. 59, 390 metres); St. 105 (6°8′ N., 121°19′ E., 275 metres) and west of Kwandang Bay entrance (St. 116, 72 metres).

3. *Chione* (*Timoclea*) *recognita* Smith.

1863. *Venus marica* Reeve, (ex parte, non Linn.), Conch. Icon., XIV, *Venus*, pl. XXII, fig. 104 *a*.
1885. *Venus* (*Chione*) *recognita* Smith, "Challenger" Lamellibranchia, p. 125, pl. III, figs. 5, 5*a*—*e*.

1890. *Chione recognita* Paetel, Cat. Conch. Samm., III, p. 87.
1896. *Chione recognita* Casto de Elera, Cat. Sist. Filip., p. 756.
1903, *Venus recognita* Smith, Faun. Geogr. Maldive, Laccadixe Archipel., II, p. 625.
1903. *Chione recognita* Hidalgo, Obras Malacol., II, p. 298.
1905. *Chione recognita* Hidalgo, Cat. Filip., p. 339.
1906. *Chione recognita* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1909. *Chione* (*Omphaloclathrum*) *recognita* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 242.
1910. *Chione recognita* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1911. *Venus pseudomarica* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 52, 53.
1917. *Chione recognita* Odhner, Kungl. Svensk. Akad. Handl., LII, N⁰ 16, p. 27.
1928. *Venus* (*Chione*) *recognita* Faustino, Summary Philippine Mar. Freshw. Moll., p. 71.
1929. *Chione recognita* Dautzenberg, Faun. Colon. Français., III, p. 602.

I agree with Lynge that Reeve's fig. 104*a* of *Chione* (*Timoclea*) *marica* is of an adult shell of *C.* (*T.*) *recognita*. The distinguishing characters of the species were described by Smith and Lynge, and it is only necessary to add that the concentric ridges on the surface of its shell have "longer, thin, erect lamellae", which are quite prominent on the posterior region of the adult shell, but hardly noticeable on young shells.

Distribution: — *C.* (*T.*) *recognita* was described from the Philippines, and has since been recorded from the Maldive Archipelago, Gulf of Siam and Mast-Head Reef, Queensland.

In the "Siboga" collection there are specimens of this species from Bay of Pidjot, Lombok (St. 33), Sailus Ketjil, Paternoster Islands (St. 37), Bay of Bima (St. 47), south-east side of Pearl Bank, Sulu Archipelago (St. 96), Anchorage off Kampong Kelang, south coast of Manipa Island (St. 184) and Buka or Cyrus Bay, south coast of Rotti Island (St. 299).

4. *Chione* (*Timoclea*) *scandularis* Hedley.

1909. *Chione scandularis* Hedley, Proc. Linn. Soc. N. S. Wales, XXXIV, p. 431, pl. XXXVIII, figs. 28, 29.
1911. *Venus scandularis* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 52.

Hedley's description and figures of *Chione* (*Timoclea*) *scandularis* are excellent, but his comparison of this new species with *C.* (*T.*) *scabra* is not so appropriate. *C.* (*T.*) *scandularis* is, on the other hand, very closely allied to *C.* (*T.*) *subnodulosa* (Hanley)[1], but its concentric lamellae are neither so raised, nor so beaded, and the escutcheon area is much more extensive and flat and not so narrow and excavated as in the latter species. The shells of *C.* (*T.*) *scandularis*, further, are less tumid and the umbones are less prominent.

Distribution: — *C.* (*T.*) *scandularis* was described from the Hope Island, North Queensland, and has also been obtained at other places in the same locality.

The "Siboga" specimens of the species were collected at the Anchorage off Djangkar, Java (St. 4), Bay of Bima (St. 47), Kambaragi Bay, Tanah Djampea (St. 64), Macassar (St. 71), west of Kwandang Bay entrance (St. 116) and Lohio Bay, Buton Strait (St. 205).

5. *Chione* (*Timoclea*) *subnodulosa* (Hanley).

1845. *Venus subnodulosa* Hanley, Proc. Zool. Soc. London (volume for 1844), p. 160.
1853. *Chione subnodulosa* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 143.

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[1] Hanley, S. — Proc. Zool. Soc. London (Volume for 1844), p. 160 (1845).

1856. *Venus subnodulosa* Hanley, Rec. Biv. Shells, Appendix, p. 360, pl. XVI, fig. 19.
1857. *Chione* (*Timoclea*) *subnodulosa* Adams, H. & A., Gen. Rec. Moll., II, p. 422.
1863. *Venus subnodulosa* Reeve, Conch. Icon., XIV, *Venus*, pl. XXI, fig. 102.
1867. *Venus* (*Chione-Omphaloclathrum*) *subnodulosa* Römer, Malakozool. Blätt., XIV, p. 61.
1884. *Venus subnodulosa* Grasset, Ind. Test. Viv., p. 263.
1884. *Venus subnodulosa* Smith, Rept. Voy. "Alert", p. 94.
1890. *Chione* (*Omphaloclathrum*) *subnodulosa* Paetel, Cat. Conch. Samm., III, p. 88.
1899. *Chione* (*Omphaloclathrum*) *subnodulosa* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 196.
1903. *Chione subnodulosa* Hidalgo, Obras Malacol., II, p. 299.
1905. *Chione subnodulosa* Hidalgo, Cat. Filip., p. 339.
1906. *Chione subnodulosa* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1909. *Chione* (*Omphaloclathrum*) *subnodulosa* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Math.-Nat., (7) V, p. 243, pl. V, fig. 5.
1910. *Chione subnodulosa* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1911. *Venus subnodulosa* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 52.
1928. *Venus* (*Chione*) *subnodulosa* Faustino, Summary Philippine Mar. Freshw. Moll., p. 72.

The "Siboga" shells, which I refer to *C.* (*T.*) *subnodulosa* (Hanley) agree with the specimens of the species in the British Museum (Nat. Hist.), London, from Moreton Bay and Queensland. The concentric lamellae in one of the shells near the anterior margin, however, are very wavy and run into one another.

Distribution: — *C.* (*T.*) *subnodulosa* has been recorded from Singapore, Gulf of Siam, Philippine Islands, Torres Straits and off Queensland.

In the "Siboga" collection the species is represented by one adult and three young shells collected at the Anchorage off Pulu Jedan, east coast of Aru Islands (St. 273).

6. *Chione* (*Timoclea*) *costellifera* (Adams & Reeve).

1848. *Venus costellifera* Adams & Reeve, "Samarang" Moll., p. 79, pl. XXI, fig. 18.
1853. *Venus costellifera* Sowerby, Thes. Conch., II, p. 718, pl. CLVII, fig. 106.
1853. *Venus costellifera* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 130.
1857. *Chione costellifera* Adams, H. & A., Gen. Rec. Moll., II, p. 421.
1860. *Venus costellifera* Reeve, Elem. Conch., II, p. 110.
1863. *Venus costellifera* Reeve, Conch. Icon., XIV, *Venus*, pl. XXII, fig. 103.
1867. *Venus* (*Chione-Omphaloclathrum*) *costellifera* Römer, Malakozool. Blätt., XIV, p. 56.
1870. *Chione costellifera* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 446.
1884. *Venus costellifera* Grasset, Ind. Test. Viv., p. 261.
1886. *Chione costellifera* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 102.
1890. *Chione* (*Omphaloclathrum*) *costellifera* Paetel, Cat. Conch. Samm., III, p. 85.
1896. *Chione costellifera* Casto de Elera, Cat. Sist. Filip., 755.
1899. *Chione* (*Omphaloclathrum*) *costellifera* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 195.
1900. *Chione costellifera* Newton, Geol. Mag., VII, p. 554.
1903. *Chione costellifera* Hidalgo, Obras Malacol., II, p. 302.
1905. *Chione costellifera* Hidalgo, Cat. Filip., p. 339.
1906. *Chione costellifera* Melvill & Standen, Proc. Zool. Soc. London, p. 834.
1910. *Chione costellifera* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1928. *Venus* (*Chione*) *costellifera* Faustino, Summary Philippine Mar. Freshw. Moll., p. 71.

The very regular closely placed radial ribs of *C.* (*T.*) *costellifera* are not so raised as the concentric ridges. At their points of intersection the radial and the concentric ridges are somewhat thickened and give the shell almost a beaded appearance.

Distribution: — *C.* (*T.*) *costellifera* is widely distributed in the Indo-Pacific Region, and has also been recorded from the Red Sea and the Persian Gulf.

In the "Siboga" collection there are two shells of this species dredged at Sailus Ketjil, Paternoster Islands (St. 37) and Banda Anchorage (St. 240, 9—45 metres).

7. *Chione* (*Timoclea*) *scabra* (Hanley).

1844. *Venus scabra* Hanley, Proc. Zool. Soc. London, p. 161.
1853. *Venus scabra* Sowerby, Thes. Conch., II, p. 718, pl. CLVII, figs. 101—102.
1853. *Chione scabra* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, p. 130.
1856. *Venus scabra* Hanley, Rec. Biv. Shells, Appendix, p. 361, pl. XVI, fig. 24.
1857. *Chione scabra* Adams, H. & A., Gen. Rec. Moll., II, p. 421.
1860. *Venus scabra* Reeve, Elem. Conch., II, p. 110.
1863. *Venus scabra* Reeve, Conch. Icon., XIV, *Venus*, pl. XXI, figs. 97 *a*, *b*.
1867. *Venus* (*Chione-Omphaloclathrum*) *scabra* Römer, Malakozool. Blätt., XIV, p. 58.
1884. *Venus scabra* Grasset, Ind. Test. Viv., p. 262.
1885. *Venus* (*Chione*) *scabra* Smith, "Challenger" Lamellibranchia, p. 124.
1887. *Venus* (*Timoclea*) *scabra* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 212.
1890. *Chione* (*Omphaloclathrum*) *scabra* Paetel, Cat. Conch. Samm., III, p. 87.
1895. *Chione scabra* Pilsbry, Cat. Mar. Moll. Japan, p. 128.
1896. *Chione scabra* Casto de Elera, Cat. Sist. Filip., p. 757.
1898. *Chione* (*Omphaloclathrum*) *scabra* Melvill & Standen, Journ. Conch., IX, p. 83.
1903. *Chione scabra* Hidalgo, Obras Malacol., II, p. 302.
1905. *Chione micra* Pilsbry, Proc. Acad. Nat. Sc. Philadelphia, LVI, p. 552, pl. XLI, figs. 4, 5.
1905. *Chione scabra* Hidalgo, Cat. Filip., p. 339.
1906. *Chione scabra* Melvill & Standen, Proc. Zool. Soc. London, p. 835.
1906. *Chione scabra* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1906. *Chione scabra* Owston, Japan. Loochooan Shells, p. 39.
1906. *Venus* (*Chione*) *scabra* Dautzenberg, P. & Fischer, H., Journ. Conchyliol., LIV, p. 217.
1909. *Venus* (*Chione*) *scabra* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 133.
1909. *Venus* (*Chione*) *scabra* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 468.
1910. *Chione scabra* Hedley, Austral. Ass. Adv. Sci., XII. p. 349.
1918. *Antigona scabra* Hedley, Journ. Proc. Roy. Soc. N. S. Wales, LI, p. M. 23.
1928. *Venus* (*Chione*) *scabra* Faustino, Summary Philippine Mar. Freshw. Moll., p. 72.

The "Siboga" shells, which I refer to *C.* (*T.*) *scabra*, agree with the type-shells of this species from the Philippines in the British Museum (Nat. Hist.), London. The shells vary in reference to the numbers of the radial and concentric ridges on the surface, but in general conform to the type-shells.

Distribution: — *C.* (*T.*) *scabra* has a wide range in the Indo-Pacific, and has also been recorded from the Persian Gulf.

In the "Siboga" collection the species is represented from the Anchorage off Djangkar (St. 4), Macassar (St. 71) and Lohio Bay, Buton Strait (St. 205).

8. *Chione* (*Timoclea*) *crassisquamata* sp. nov. (Plate VI, figs. 23, 24).

Chione (*Timoclea*) *crassisquamata* is very closely allied to *C.* (*T.*) *imbricata* (Sowerby)[1], but the shell of the new species is much more triangular, more elongate, and neither so high nor so inflated. The sculpture consists of ten very prominent, raised, rounded, radial ridges which in the areas corresponding to concentric ridges bear short spines in the upper and posterior parts of the shell, and foliaceous scales on the anterior lower half. The shell is of a cream colour and the spines are of an orange tint.

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[1] Sowerby, G. B. — Thes. Conch., II, p. 715, pl. CLVI, figs. 81, 82 (1853). Also see Reeve, L., Conch. Icon., XIV, *Venus*, pl. XXIV, fig. 118 (1864).

Measurements of Holotype: — length 9.3 mm., height 7.4 mm., diameter 5.6 mm.

Habitat: — The Holotype and a right valve were dredged at the Anchorage off Noimini, south coast of Timor (St. 296).

9. *Chione* (*Clausinella*) *calophylla* (Philippi).

1742. *Concha valvis aequalibus*, etc., Gualtieri. Ind. Test., pl. LXXXVIII, figs. D, D.
1780. *Venus cancellata* Born (non Linn.), Test. Mus. Caes. Vindobon., p. 61, pl. XLI, fig. 9.
1830. *Venus Thiara* Sowerby (non Dillwyn), Gen. Shells, II, *Venus*, pl. I, fig. 4; pl. II, fig. 3.
1836. *Venus calophylla* Philppi, Archiv Naturgesch., I, p. 229, pl. VIII, fig. 2.
1841. *Venus Thiara* Reeve (non Dillwyn), Conch. Syst., I, pl. LXVII, fig. 3.
1853. *Venus calophyla* (sic) and *V. Cumingi* Sowerby, Thes. Conch., II, p. 724, pl. CLX, fig. 176; p. 725, pl. XLVII, fig. 122.
1853. *Venus calophylla* and *V. Cumingi* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc., pp. 120, 121.
1853. *Circomphalus calophylla* Mörch, Cat. Yoldi, II, p. 23.
1856. *Venus calophylla* Hanley, Rec. Biv. Shells, Appendix, p. 361, pl. XVI, fig. 26.
1857. *Venus* (*Anaitis, Chione*) *calophylla* Römer, Krit. Untersuch., p. 62.
1857. *Chione* (*Circomphalus*) *calophylla* and *C.* (*C.*) *cumingi* Adams, H. & A., Gen. Rec. Moll., II, p. 422.
1860. *Venus calophyla* (sic) Reeve, Elem. Conch., II, p. 110.
1863. *Venus Calophylla* Reeve, Conch. Icon., XIV, *Venus*, pl. XXIII, fig. 114.
1865. *Venus* (*Anaitis*) *calophylla* Römer, Malakozool. Blätt., XII, p. 157.
1867. *Chione* (*Circomphalus*) *calophylla* Angas, Proc. Zool. Soc. London, p. 921.
1869. *Circomphalus calophyllus* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 881.
1870. *Venus calophylla* Pfeiffer in Martini-Chemn., Conch.-Cab. (N.F.), XI, (1), *Veneracea*, p. 208, pl. XXXIII, figs. 13—15.
1876. *Chione calophylla* Tapparone-Canefri, Viag. "Magenta", p. 230.
1882. *Chione* (*Circomphalus*) *calophylla* Dunker, Ind. Moll. Mar. Japon., p. 198.
1884. *Venus calophylla* Grasset, Ind. Test. Viv., p. 261.
1884. *Venus* (*Chione*) *calophylla* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 992.
1885. *Venus* (*Chione*) *calophylla* Smith, "Challenger" Lamellibranchia, p. 122.
1887. *Venus* (*Anaitis*) *calophylla* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 212.
1890. *Anaitis calophylla* and *A. Cumingi* Paetel, Cat. Conch. Samm., III, p. 83.
1895. *Chione calophylla* Pilsbry, Cat. Mar. Moll. Japan, p. 128.
1896. *Anaitis calophylla* Casto de Elera, Cat. Sist. Filip., p. 754.
1898. *Anaitis calophylla* Melvill & Standen, Journ. Conch., IX, p. 83.
1898. *Anaitis calophylla* Melvill & Sykes, Proc. Malacol. Soc. London, V, p. 47.
1899. *Anaitis calophylla* Melvill & Standen, Journ. Linn. Soc. London (Zool.) XXVII, p. 196.
1903. *Anaitis calophylla* Hidalgo, Obras Malacol., II, p. 294.
1904. *Chione calophylla* Hedley, Proc. Linn. Soc. N. S. Wales, XXVII, p. 883.
1905. *Anaitis calophylla* Hidalgo, Cat. Filip., p. 338.
1906. *Chione calophylla* Melvill & Standen, Proc. Zool. Soc. London, p. 833.
1906. *Chione calophylla* Owston, Japan. Loochooan Shells, p. 39.
1909. *Chione* (*Circomphalus*) *calophylla* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 246.
1910. *Cytherea calophylla* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1911. *Venus* (*Anaitis*) *calophylla* Faustino, Summary Philippine Mar. Freshw. Moll., p. 70.

Chione (*Clausinella*) *calophylla* is a very variable species. The outline, convexity and sculpture of the shells vary a great deal, but I have not been able to separate any distinctly marked varieties.

Distribution: — *C.* (*C.*) *calophylla* has a wide range in the Indo-Pacific. A detailed list of its records is published in Lynge's paper.

The "Siboga" Expedition collected shells of this species in the Madura Strait (St. 2), Macassar (St. 71) and Saleyer (St. 213).

10. *Chione* (*Clausinella*) *tiara* (Dillwyn).

1782. *Concha* (*Veneris*) *orientalis* Chemnitz, Conch. Cab., VI, p. 290, pl. XXVII, figs. 279—281.
1798. *Venus Lamellata* Röding (ex parte), Mus. Boltenianum, p. 183.
1817. *Venus tiara* Dillwyn, Descr. Cat., I, p. 162.
1825. *Venus Tiara* Sowerby, Cat. Tankerville, p. 16.
1835. *Venus thiara* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 372.
1840. *Venus thiara* Pfeiffer, Krit. Reg., p. 62.
1843. *Venus Thiara* Hanley, Rec. Biv. Shells, p. 112.
1845. *Venus thiara* Catlow & Reeve, Conch. Nomencl., p. 36.
1846. *Venus foliacea* Philippi, Abbild. Beschreib. Conch., II, p. 17, *Venus*, pl. V, fig. 1.
1853. *Venus thiara* Sowerby, Thes. Conch., II, p. 723, pl. CLVIII, figs. 125—130.
1853. *Venus alta* Sowerby, Thes. Conch., II, p. 724, pl. CLVIII, figs. 131—133.
1853. *Chione tiara*, *C. foliacea*, *C. alta* and *C. retroversa* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 121—123.
1853. *Circumphallus lamellata* Mörch, Cat. Yoldi, II, p. 24.
1856. *Venus tiara* Hanley in Wood, Ind. Test., p. 42, pl. VII, fig. 8.
1857. *Venus* (*Anaitis-Clausina*) *tiara* and *C.* (*C.*) *tiara* Römer, Krit. Untersuch., p. 63.
1857. *Chione* (*Circomphalus*) *alta* and *C.* (*C.*) *tiara* Adams, H. & A., Gen. Rec. Moll., II, p. 422.
1860. *Venus alta*, *V. foliacea* and *V. thiara* Reeve, Elem. Conch., p. 110.
1863. *Venus thiara* and *V. alta* Reeve, Conch. Icon., XIV, *Venus*, pl. XXIII, figs. 109*a*, *b*, 110, 115.
1865. *Venus* (*Anaitis*) *tiara* and *V.* (*A*) *foliacea* Römer, Malakozool. Blätt., XII, pp. 158, 160.
1869. *Chione* (*Circomphalus*) *tiara* Dunker, Cat. Mus. Godeffroy, IV, p. 109.
1869. *Chione* (*Circomphalus*) *tiara* Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 230.
1869. *Circomphalus tiara* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 888.
1869. *Venus foliacea* Ossel, Malacol. Mar. Rosso, p. 63.
1869. *Venus tiara* Pfeiffer in Martini-Chemn., Conch. Cab. (N. F.), XI, (1), *Veneracea*, p. 133, pl. VII, figs. 9—11.
1871. *Venus foliacea* Lischke, Japan. Meeresconch., II, p. 171.
1874. *Venus foliacea* Lischke, Japan. Meeresconch., III, p. 85.
1880. *Venus* (*Chione*) *foliacea* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 326.
1882. *Chione* (*Circomphalus*) *foliacea* Dunker, Ind. Moll. Mar. Japon., p. 198.
1884. *Venus tiara* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 799.
1884. *Venus alta* and *V. thiara* Grasset, Ind. Test. Viv., pp. 261, 263.
1890. *Anaitis foliacea* and *A. tiara* Paetel, Cat. Conch. Samm., III, pp. 83, 84.
1895. *Chione foliacea* Pilsbry, Cat. Mar. Moll. Japan, p. 128.
1896. *Anaitis alta* Casto de Elera, Cat. Sist. Filip., p. 754.
1898. *Anaitis foliacea* Melvill & Sykes, Proc. Malacol. Soc. London, V, p. 47.
1899. *Anaitis thiara* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 196.
1901. *Anaitis foliacea* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 281.
1902. *Anaitis foliacea* Shopland, Proc. Malacol Soc. London, V, p. 178.
1903. *Anaitis tiara* and *A. foliacea* Hidalgo, Obras Malacol., II, p. 296, 297.
1905. *Anaitis foliacea* and *A. tiara* Hidalgo, Cat. Filip., p. 338.

1906. *Anaitis foliacea* and *A. tiara* Melvill & Standen, Proc. Zool. Soc. London, pp. 833, 834.
1910. *Cytherea foliacea* and *C. tiara* Hedley, Austral. Ass. Adv. Sci., XII, p. 348, 349.
1914. *Antigona tiara* Iredale, Proc. Zool. Soc. London, p. 666.
1916. *Antigona tiara* Hedley, Journ. Proc. Roy. Soc. West Australia, I, p. 165.
1917. *Chione foliacea* Odhner, Kungl. Sv. Akad. Handl., LII, N⁰ 16, p. 27.
1928. *Venus* (*Anaitis foliacea*) and *V.* (*A.*) *tiara* Faustino, Summary Philippine Mar. Freshw. Moll., p. 71.
1929. *Anaitis foliacea* Dautzenberg, Faun. Colon. Français., III, p. 601.

Venus alta Sowerby is undoubtedly synonymous with *Chione* (*Clausinella*) *foliacea* (Philippi), while Sowerby and Reeve have regarded the latter species of Philippi as a synonym of *C.* (*C.*) *tiara* (Dillwyn). Dautzenberg, on the other hand, in his recent work remarked "mais cette assimilation est fort douteuse car les figurations de Born, Chemnitz, etc., citées par Dillwyn représentent des coquilles plus grandes et ornées de lamelles beaucoup plus espacées". I am unable to accept the above view, as in large collections from any area the specimens of this species vary according to age and size, both in respect to the form of the shells and the lamellar projections on them.

Distribution: — *C.* (*C.*) *tiara*) has a wide range in the Indo-Pacific and has also been recorded from the Red Sea and the Persian Gulf.

In the "Siboga" collection it is represented by shells collected at the Anchorage off Djangkar, Java (St. 4), Bay of Pidjot, Lombok (St. 33), Kambaragi Bay, Tanah Djampeah (St. 64) and St. 319 (6° 16′.5 S., 114° 37′ E., 82 metres).

Genus **Anomalocardia** Schumacher.

1817. *Anomalocardia* Schumacher, Essai Nouv. Syst., pp. 44, 134.
1839. *Triquetra* Anton, Verzeichniss, p. 10.
1853. *Cryptogramma* Mörch, Cat. Yoldi, II, p. 22.
1853. *Anomalocardia* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 115.
1857. *Cryptogramma* Adams, H. & A., Gen. Rec. Moll., II, p. 420.
1887. *Cryptogramma* Fischer, P., Man. Conchyliol., p. 1302.
1902. *Anomalocardia* Dall, Proc. U. S. Nat. Mus., XXVI, p. 359.
1903. *Anomalocardia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1301.

Klein's pre-Linnaean name *Anomalocardia* 1) does not invalidate Schumacher's genus of the same name, and I have, therefore, with Deshayes and Dall adopted it in preference to *Cryptogramma* Mörch.

The genotype is *Anomalocardia fluctuosa* (Linn.). Dall proposed a new section *Anomalodiscus* (loc. cit., p. 359) for the Indo-Pacific form *Anomalocardia* (*Anomalodiscus*) *squamosa* (Linn.), in which the surface of the shell has a reticulate, subequal sculpture, and the hinge is without rugosities.

1. *Anomalocardia* (*Anomalodiscus*) *squamosa* (Linn.).

1741. *Billetje* Rumph, Amboin. Rarit., p. 143, pl. XLIV, fig. M.
1758. *Venus squamosa* Linnaeus. Syst. Nat. (ed. X), p. 688.
1767. *Venus squamosa* Linnaeus, Syst. Nat. (ed. XII), p. 1133.

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1) Klein, J. T. — Tent. Method. Ostracol., p. 141 (1753).

1782. *Venus squamosa Linnaei* Chemnitz, Conch.-Cab., VI, p. 332, pl. XXXI, fig. 335.
1788. *Venus squamosa* Schröter, Conch. Cab. Namen Reg., p. 112.
1788. *Venus squamosa* Barbut, Gen. Verm., p. 50, pl. IV, fig. 12.
1790. *Venus squamosa* Gmelin, Syst. Nat. (ed. XIII), p. 3275.
1802. *Venus squamosa* Bosc, Hist. Nat. Coq., III, p. 50.
1817. *Venus squamosa* Dillwyn, Descr. Cat., I, p. 190.
1818. *Cytherea squamosa* Lamarck, Anim. sans Vertèb., V, p. 580.
1824. *Cytheria* (sic) *squamosa* Dubois, Epitome, p. 71.
1828. *Venus* (*Triquetra*) *squamosa* Blainville, Dict. Sci. Nat., LVII, p. 274.
1835. *Cytherea squamosa* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 327.
1843. *Venus squamosa* Catlow & Reeve, Conch. Nomencl., p. 36.
1843. *Venus Squamosa* Hanley, Rec. Biv. Shells, p. 115.
1847. *Cytherea squamosa* Chenu, Illustr. Conchyliol., *Cytherea*, pl. XIII, figs. 12, 12*a*, *b*.
1853. *Venus squamosa* Sowerby, Thes. Conch., II, p. 716, pl. CLVI, figs. 83, 84.
1853. *Anomalocardia squamosa* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc., p. 117.
1853. *Cryptogramma squamosa* Mörch, Cat. Yoldi, II, p. 22.
1855. *Venus squamosa* Hanley, Ipsa Linn. Conch., p. 73.
1857. *Venus* (*Murcia-Anomalocardia*) *squamosa* Römer, Krit. Untersuch., p. 56.
1857. *Cryptogramma squamosa* Adams, H. & A., Gen. Rec. Moll., II, p. 420.
1860. *Venus squamosa* Reeve, Elem. Conch., II, p. 111.
1862. *Cryptogramma squamosa* Chenu, Man. Conchyliol., II, p. 83, fig. 361.
1863. *Venus squamosa* Reeve, Conch. Icon., XIV, *Venus*, pl. XXI, fig. 101.
1867. *Venus* (*Cryptogramma*) *squamosa* Römer, Malakozool. Blätt., XIV, p. 26.
1869. *Cryptogramma squamosa* Dunker, Cat. Mus. Godeffroy, IV, p. 110.
1869. *Cryptogramma squamosa* Adams, A., Ann. Mag. Nat. Hist. (4) III, p. 230.
1871. *Venus squamosa* Pfeiffer in Martini-Chemn., Conch.-Cab. (N. F.), XI (1), *Cyprina*, etc., p. 178, pl. XVII, fig. 12.
1878. *Cryptogramma squamosa* Kobelt, Illustr. Conchylienbuch, p. 338.
1882. *Cryptogramma squamosa* Dunker, Ind. Moll. Mar. Japon., p. 197.
1884. *Venus squamosa* Grasset, Ind. Test. Viv., p. 263.
1884. *Venus* (*Cryptogramma*) *squamosa* Tryon, Struct. Syst. Conch., p. 176, pl. CXIV, fig. 30.
1887. *Venus* (*Cryptogramma*) *squamosa* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 212.
1889. *Venus squamosa* Morlet, Journ. Conchyliol., XXXVII, p. 170.
1891. *Venus* (*Cryptogramma*) *squamosa* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 233.
1895. *Cryptogramma squamosa* Pilsbry, Cat. Mar. Moll. Japan, p. 128.
1896. *Cryptogramma squamosa* Casto de Elera, Cat. Sist. Filip., p. 753.
1903. *Cryptogramma squamosa* Hidalgo, Obras Malacol., II, p. 290.
1905. *Cryptogramma squamosa* Hidalgo, Cat. Filip., p. 338.
1905. *Venus* (*Cryptogramma*) *squamosa* Dautzenberg, P. & Fischer, H., Journ. Conchyliol., LIII, p. 222.
1906. *Cryptogramma squamosa* Owston, Japan, Loochooan Shells, p. 39.
1909. *Cryptogramma squamosa* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 241.
1917. *Cryptogramma squamosa* Odhner, Kungl. Svensk. Akad. Handl., LII, N⁰ 16, p. 9.
1928. *Cryptogramma squamosa* Faustino, Summary Philippine Mar. Freshw. Moll., p. 70.

The shell of *A.* (*A.*) *squamosa* is ovate-cordate in outline; it is thick and solid, and has a well developed sculpture consisting of close set radial ridges which are cut up into squarish tubercles by concentric lines of growth.

Distribution: — *A.* (*A.*) *squamosa* has a wide range in the Indo-Pacific, but has not been found west of Ceylon so far.

The "Siboga" Expedition collected a single shell of the species at Macassar (St. 71).

Genus **Clementia** Gray.

1847. *Clementia* Gray, Proc. Zool. Soc. London, p. 184.
1857. *Clementia* Adams, H. & A., Gen. Rec. Moll., II, p. 433.
1887. *Clementia* Fischer, P., Man. Conchyliol., p. 1084.
1903. *Clementia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1234.
1927. *Clementia* Cox, Rept. Palaeontol. Zanzibar, p. 53.

A good description of *Clementia* is published in Cox's recent work on the Palaeontology of Zanzibar. The genotype is *Clementia papyracea* (Gray).

1. *Clementia papyracea* (Gray).

1825. *Venus papyracea* Gray, Ann. Philos., IX, p. 137.
1828. *Venus papyracea* Wood, Ind. Test., Supplement, p. 5, pl. II, fig. 8.
1843. *Venus Papyracea* Hanley, Rec. Biv. Shells, p. 127.
1845. *Venus papyracea* Catlow & Reeve, Conch. Nomencl., p. 35.
1847. *Clementia papyracea* Gray, Proc. Zool. Soc. London, p. 184.
1849. *Venus hyalina* Philippi, Abbild. Beschreib. Conch., III, p. 39, *Venus*, pl. X, fig. 6.
1852. *Clementia papyracea* and *C. similis* Sowerby, Thes. Conch., II, p. 700, pl. CLI, fig. 155, 156.
1853. *Clementia Strangei* and *C. Moretoniensis* Deshayes, Proc. Zool. Soc. London, pp. 17, 18.
1853. *Clementia papyracea* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 197.
1853. *Clementia Cumingii* Deshayes, Proc. Zool. Soc. London, p. 346.
1857. *Clementia papyracea* Adams, H. & A., Gen. Rec. Moll., II, p. 433, pl. CIX, fig. 1.
1862. *Clementia papyracea* Chenu, Man. Conchyliol., II, p. 92, fig. 410.
1869. *Clementia Moretonensis* (sic) Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 236.
1872. *Clementia hyalina* and *C. papyracea* Pfeiffer in Martini-Chemn., Conch.-Cab. (N.F.), XI (1), *Veneracea*, p. 253. pl. XXXI, figs. 9—13; p. 254, pl. XXXI, fig. 16.
1878. *Clementia papyracea* Kobelt, Illustr. Conchylienbuch, p. 339, pl. XCVII, fig. 14.
1882. *Clementia papyracea* Dunker, Ind. Moll. Mar. Japon., p. 205.
1884. *Clementia papyracea* Grasset, Ind. Test. Viv., p. 268.
1884. *Clementia papyracea* Tryon, Struct. Syst. Conch., III, p. 181, pl. CXV, fig. 43.
1885. *Clementia papyracea* Smith, "Challenger" Lamellibranchia., p. 154.
1890. *Clementia papyracea* Paetel, Cat. Conch. Sam., III, p. 92.
1893. *Clementia papyracea* Melvill & Abercrombie, Mem. Proc. Manchester Lit. Phil. Soc., (4) VII, p. 30.
1895. *Clementia papyracea* Pilsbry, Cat. Mar. Moll. Japan, p. 127.
1896. *Clementia papyracea* Casto de Elera, Cat. Sist. Filip., p. 762.
1902. *Clementia papyracea* Dall, Proc. U.S. Nat. Mus., XXVI, p. 348.
1903. *Clementia hyalina* Hidalgo, Obras Malacol., II, p. 318.
1905. *Clementia hyalina* Hidalgo, Cat. Filip., p. 342.
1906. *Clementia papyracea* Melvill & Standen, Proc. Zool. Soc. London, p. 836.
1906. *Clementia papyracea* Owston, Japan. Loochooan Shells, p. 38.
1910. *Clementia papyracea* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1917. *Clementia papyracea* Odhner, Kungl. Svensk. Akad. Handl., LII, N⁰ 16, p. 9.
1918. *Clementia papyracea* Hedley, Journ. Roy. Soc. N. S. Wales, LI, p. M. 24.
1927. *Clementia papyracea* Cox, Rept. Palaeontol. Zanzibar, p. 54, pl. IV, figs. 3, 4.
1928. *Clementia papyracea* Faustino, Summary Philippine Mar. Freshw. Moll., p. 68.
1930. *Clementia papyracea* Cox, Mon. Geol. Dept. Hunterian Mus. Glasgow Univ., N⁰ 4, pp. 130, 158.

There can be no doubt that *C. hyalina* Philippi, *C. similis* Sow., *C. strangei* Deshayes, *C. moretoniensis* Deshayes and *C. cumingii* Deshayes are all synonyms of *C. papyracea* (Gray). A good description of the species was recently published by Cox.

Distribution: — *C. papyracea* is widely distributed round Eastern Australia, the Philippines, Dutch East Indies, Indian Coast, Persian Gulf, and as far west as Arabia.

The "Siboga" Expedition collected a single left valve at Saleyer (St. 213).

Genus **Venerupis** Lamarck.

1818. *Venerupis* Lamarck, Anim. sans Vertèb., V, p. 506.
1846. *Irus* Hermannsen (non Oken), Ind. Gen. Moll. II, p. 684.
1857. *Rupellaria* Adams, H. & A., (nec Fleuriau), Gen. Rec. Moll., II, p. 437.
1874. *Venerupis* Sowerby in Reeve, Conch. Icon., XIX, *Venerupis*, pl. I, (explanation).
1887. *Venerupis* Fischer, P., Man. Conchyliol., p. 1087.
1903. *Venerupis* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1327.
1923. *Venerupis* Lamy, Journ. Conchyliol., LXVII, p. 275.

A good definition of the genus *Venerupis* and of the structure of its hinge was published by Lamy in his valuable revision of the genus cited above. The genotype is *Venerupis irus* (Linn.).

1. *Venerupis macrophylla* Deshayes.

1853. *Venerupis macrophylla* Deshayes, Proc. Zool. Soc. London, pl. XVIII, fig. 8.
1853. *Venerupis macrophylla* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae*, etc., p. 193.
1854. *Venerupis macrophylla* Sowerby, Thes. Conch., II, p. 763, pl. CLXV, fig. 20.
1857. *Rupellaria macrophylla* Adams, H. & A., Gen. Rec. Moll., II, p. 438.
1860. *Venerupis macrophylla* Reeve, Elem. Conch., II, p. 134.
1869. *Venerupis macrophylla* von Martens, von der Deckens Reise, p. 66.
1869?. *Rupellaria macrophylla* Adams, A., Ann. Mag. Nat. Hist., (4) III, p. 236.
1870. *Rupellaria macrophylla* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1874. *Venerupis macrophylla* Sowerby in Reeve, Conch. Icon., XIX, *Venerupis*, pl. IV, fig. 23.
1877. *Rupellaria macrophylla* Pagenstecher, Zool. Ergebn. Reise, Rothenmeer Mollusk., p. 42,
1881. *Rupellaria macrophylla* de Rochebrune, Nouv. Archiv. Mus. d'Hist. Nat. Paris, (2) III. p. 255.
1882. *Venerupis macrophylla* Dunker, Ind. Moll. Mar. Japon., p. 209.
1884. *Venerupis macrophylla* Grasset, Ind. Test. Viv., p. 260.
1886. *Venerupis macrophylla* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 103.
1888. *Venerupis macrophylla* Jousseaume, Mem. Soc. Zool. France, I, p. 209.
1890. *Venerupis macrophylla* Paetel, Cat. Conch. Samm., III, p. 93.
1891. *Venerupis macrophylla* Smith, Proc. Zool. Soc. London, p. 425.
1893. *Venerupis macrophylla* Melvill & Abercrombie, Mem. Proc. Manchester Lit. Phil. Soc., (4) VII, p. 30.
1898. *Irus macrophylla* Melvill & Standen, Journ. Conch., IX, p. 84.
1899. *Venerupis macrophylla* Hedley, Mem, Austral. Mus., III, pp. 502, 529.
1901. *Venerupis macrophylla* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 282.
1902. *Venerupis macrophylla* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1903. *Venerupis macrophylla* Hidalgo, Obras Malacol., II, p. 321.
1905. *Venerupis macrophylla* Hidalgo, Cat. Filip., p. 342.
1905. *Venerupis macrophylla* Anthony, Bull. Mus. d'Hist. Nat. Paris, XI, p. 495.
1906. *Venerupis macrophylla* Melvill & Standen, Proc. Zool. Soc. London, p. 836.
1909. *Venerupis Irus* Lynge (ex parte, non Linn.), D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 252.
1917. *Venerupis macrophylla* Odhner, Kungl. Svensk. Vetensk. Handl., LII, N⁰ 16, p. 26.
1923. *Venerupis macrophylla* Lamy, Journ. Conchyliol., LXVII, p. 290.
1928. *Venerupis macrophylla* Faustino, Summary Philippine Mar. Freshw. Moll., p. 83.

1929. *Venerupis macrophylla* Dautzenberg, Faun. Colon. Français., III, p. 605.
1930. *Venerupis irus* Lamy (nec Linn.), Faun. Südwest Austral., V, p. 594.

I cannot agree with LYNGE that the Philippine specimens, which DESHAYES named *Venerupis macrophylla*, cannot be distinguished from the Mediterranean *V. irus* (Linn.). The shells of *V. macrophylla* are generally more delicate, more ovoidal, less elongated but deeper, the concentric lamellae are less numerous, but often more foliaceous, particularly towards the posterior end, and the radial sculpture is much finer.

Distribution: — *V. macrophylla* is widely distributed in the Indo-Pacific Region.

The "Siboga" Expedition collected two shells of the species at Tual Anchorage, Kei Islands (St. 258) and Sangkapoera roads, Bawean Island (St. 323).

Family PETRICOLIDAE.

Genus **Petricola** Lamarck.

1801. *Petricola* Lamarck, Syst. Anim. sans Vertèb., p. 121.
1822. *Petricola* Children, Quart. Journ. Sci. Lit. Arts, XIV, p. 302.
1844. *Choristodon* Jonas, Zeitschr. Malakozool., I, p. 185.
1853. *Naranio* Gray, Ann. Mag. Nat. Hist., (2) XI, p. 38.
1857. *Choristodon* Adams, H. & A., Gen. Rec. Moll., II, p. 441.
1887. *Petricola* and *Naranio* Fischer, Man. Conchyliol., p. 1088.
1900. *Petricola* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1057.
1923. *Petricola* Lamy, Journ. Conchyliol., LXVII, p. 314.

DALL suggested *Petricola lapicida* (Chemnitz) = *P. lapicida* (Gmelin) as the genotype of *Petricola* Lamarck. LAMY, on the other hand, cited *Petricola lithophaga* (Retzius) as the genotype, and since CHILDREN had definitely designated *Petricola striata* Lam., which is a synonym of *P. lithophaga* in 1822, this designation must stand.

I agree with LAMY that it is possible to recognize a distinct subgenus for the species which have an oval shell, more rounded than that of *Petricola s. s.* and which are provided with a radial sculpture consisting of divergent or zigzag striae. The correct name for this subgenus is not *Naranio* but *Choristodon* Jonas, type *Petricola* (*Choristodon*) *typica* (Jonas), as *Naranio* Gray is an absolute synonym of the former.

1. *Petricola* (*Choristodon*) *divergens* (Gmelin).

1788. *Venus divaricata* etc. Chemnitz, Conch.-Cab., X, p. 357, pl. CLXXII, figs. 1666, 1667.
1788. *Venus lapicida* Schröter, Conch.-Cab. Namen Reg., p. 112.
1790. *Venus divergens* Gmelin, Syst. Nat., (ed. XIII), p. 3269.
1801. *Petricola costata* Lamarck, Syst. Anim. sans Vertèb., p. 121.
1802. *Venus lapicida* Bosc, Hist. Nat. Coq., III, p. 45.
1817. *Venus lapicida* Dillwyn, Descr. Cat., I, p. 190.
1818. *Petricola lucinalis* Lamarck, Anim. sans Vertèb., V, p. 504.
1824. *Petricola lucinalis* Dubois, Epitome, p. 52.
1825. *Venus lapicida* Wood, Ind. Test., pl. VIII, fig. 72*a*.
1835. *Petricola lucinalis* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 157.
1842. *Petricola Costata* Hanley, Rec. Biv. Shells, p. 53.

1853. *Naranio costata* Gray, Ann. Mag. Nat. Hist., (2) XI, p. 38.
1853. *Naranio divaricata* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 216.
1853. *Petricola lapicida* Mörch, Cat. Yoldi, II, p. 20.
1854. *Petricola divaricata* Sowerby, Thes. Conch., II, p. 776, pl. CLXVI, figs. 24, 25.
1857. *Choristodon divaricatum* Adams, H. & A., Gen. Rec. Moll., II, p. 442, pl. CX, figs. 2, 2*a*
1866. *Petricola divaricata* Mabille & Le Mesle, Journ. Conchyliol., XIV, p. 117.
1869. *Petricola divaricata* von Martens, von Deckens Reise, III, p. 66, pl. III, figs. 3, 3*a*, *b*.
1874. *Petricola divaricata* Sowerby in Reeve, Conch. Icon., XIX, *Petricola*, pl. III, fig. 22.
1877. *Petricola lapicida* Pagenstecher, Zool. Ergebn. Reise, Rothenmeer Mollusk., p. 41.
1878. *Choristodon divaricatum* (ex parte), Kobelt, Illustr. Conchylienbuch, p. 340, pl. XCIX, fig. 18.
1880. *Petricola lapicida* (nec Gmelin), von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 327.
1884. *Petricola lapicida* (nec Gmelin), Smith, Rept. Voy. "Alert", p. 98.
1884. *Petricola lapicida* (nec Gmelin), Grasset, Ind. Test. Viv., p. 260.
1885. *Petricola lapicida* (nec Gmelin), Smith, "Challenger" Lamellibranchia, p. 113.
1890. *Choristodon lapicidum* Paetel, Cat. Conch. Samm., III, p. 96.
1891. *Naranio divaricata* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 235.
1899. *Naranio lapicida* (nec Gmelin) Hedley, Mem. Austral. Mus., III, pp. 502, 529.
1902. *Choristodon lapicidum* (nec Gmelin) Shopland, Proc. Malacol. Soc. London, V, p. 178.
1902. *Petricola lapicida* Smith, (nec Gmelin), Faun. Geogr. Maldive, Laccadive Archipel., II, p. 626.
1903. *Choristodon lapicidium* (nec Gmelin) Pritchard & Gatliff, Proc. Roy. Soc. Victoria, XVI, p. 121.
1906. *Choristodon lapicidium* (nec Gmelin) Melvill & Standen, Proc. Zool. Soc. London, p. 837.
1906. *Petricola lapicida* (nec Gmelin) Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 466.
1909. *Naranio lapicida* (nec Gmelin) Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 253.
1910. *Petricola lapicida* (nec Gmelin) Hedley, Austral. Ass. Adv. Sci., XII, p. 349.
1912. *Petricola lapicida* (nec Gmelin) Verco, Trans. Roy. Soc. Soc. Australia, XXXVI, 1, p. 205.
1916. *Petricola lapicida* (nec Gmelin) Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 166.
1917. *Naranio lapicida* (nec Gmelin) Odhner, Kungl. Svensk. Akad. Handl., LII, N⁰ 16, p. 27.
1921. *Naranio lucinalis* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXVII, p. 433.
1923. *Petricola* (*Naranio*) *lapicida* (nec Gmelin) Lamy, Journ. Conchyliol., LXVII, p. 337.

Most authors have followed SMITH in uniting the West Indian *Petricola* (*Choristodon*) *lapicida* (Gmelin) with the Indo-Pacific *P.* (*C.*) *divergens*. After a careful scrutiny of the literature on the two species and the available collections, I am of opinion that SMITH's suggestion regarding the two species being synonymous, cannot be accepted as correct. The shells of the two species, owing to their living in dead coral blocks vary along similar lines, but the sculpture of the two species, as was pointed out by CHEMNITZ as early as 1788, is quite different. In *P.* (*C.*) *lapicida* the shells do not have the fine zigzag sculpture so well developed as is found on shells of all ages of the East Indian species *P.* (*C.*) *lapicida*. The raised oblique ridges which run from the umbones to the posterior slopes are, as SMITH pointed out, present or absent in varying degrees on shells of different ages; these are in any case not structural parts of the shells, but are due to a deposition of extraneous calcareous matter.

Distribution: *P.* (*C.*) *divergens* is widely distributed in the Red Sea, the Indian Ocean, Persian Gulf and in the Australian waters.

The "Siboga" Expedition collected two shells at the Anchorage off Labuan Pandan, Lombok (St. 34).

Family CARDIIDAE.

Genus **Cardium** Linn.

1758. *Cardium* Linnaeus, Syst. Nat., (ed. X), p. 678.
1799. *Cardium* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 86.
1822. *Cardium* Children, Quart. Journ. Sci. Lit. Arts, XIV, p. 315.
1844. *Cardium* Reeve, Conch. Icon., II, *Cardium*, pl. I (explanation).
1857. *Cardium* Adams, H. & A., Gen. Rec. Moll., II, p. 454.
1887. *Cardium* Fischer, P., Man. Conchyliol., p. 1037.
1900. *Cardium* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1069.
1900. *Cardium* Dall, Proc. U. S. Nat. Mus., XXIII, p. 383.
1925. *Cardium* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 134.
1927. *Cardium* Cox, Rept. Palaeontol. Zanzibar, p. 50.
1930. *Cardium* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 252.

The nomenclature of the genera and subgenera of the family Cardiidae is still very confused. DALL's scheme in the works cited above, appears to me to be rational, and I have followed it with certain modifications in preference to STEWART's more recent work.

The genotype of *Cardium* is *Cardium costatum* Linn. designated by CHILDREN. The subgenus *Cardium s. s.*, is not represented in the "Siboga" collection, but there are representatives of the subgenera *Trachycardium* Mörch [1]) — type *Cardium* (*Trachycardium*) *isocardia* Linn., *Ringicardium* P. Fischer [2]) — type *Cardium* (*Ringicardium*) *ringens* Gmelin, *Fragum* Röding [3]) — type *Cardium* (*Fragum*) *unedo* Linn., *Pratulum* Iredale [4]) — type *Cardium* (*Pratulum*) *thetidis* Hedley, *Ctenocardia* H. & A. Adams [5]) type *Cardium* (*Ctenocardia*) *hystrix* Reeve = *C.* (*C.*) *symbolicum* Iredale, *Laevicardium* Swainson [6]) — type *Cardium* (*Laevicardium*) *norvegicum* Spengler and *Papyridea* Swainson [7]) — type *Cardium* (*Papyridea*) *soleniforme* Brug.

1. *Cardium* (*Trachycardium*) *flavum* Linn.

1742. *Concha cordiformis* etc., Gualtieri, Ind. Test., pl. LXXI, fig. H.
1758. *Concharum Carthagenensium alia species* etc. Seba, Thes., pl. LXXXVI, figs. 7, 7
1758. *Cardium flavum* Linnaeus, Syst. Nat., (ed. X), p. 680.
1764. *Cardium flavum* Linnaeus, Mus. Lud. Ulr., p. 490.
1767. *Cardium flavum* Linnaeus, Syst. Nat., (ed. XII), p. 1123.
1780. *Cardium pectiniforme* Born, Test. Mus. Caes. Vindobon., p. 49, pl. III, fig. 10.
1782. *Cardium Bornii* and *C. magnum* etc. (non Born), Chemnitz, Conch.-Cab., VI, p. 188, pl. XVII, fig. 180; p. 196, pl. XIX, fig. 191.
1788. *Cardium pectiniforme* Schröter, Conch.-Cab. Namen Reg., p. 19.
1789. *Cardium regulare*, *C. pectiniforme* and *C. flavum* Bruguière, Encycloped. Méthod., I, pp. 217, 227, 232.
1790. *Cardium flavum* and *C. magnum* Gmelin, (ex parte) Syst. Nat. (ed. XIII), p. 3251.
1797. Bruguière, Encycloped. Méthod., pl. CCXCXVII, fig. 2.
1798. *Cardium Flavum* Röding, Mus. Boltenianum, p. 191.

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[1]) MÖRCH, C. A. L. I. — Cat. Yoldi, II, p. 34 (1853); see also COX, L. R., loc. cit., p. 98 (1927).
[2]) FISCHER, P. — Man. Conchyliol., p. 1037 (1887); also see DALL, W. H., op. cit., p. 1073 (1900).
[3]) RÖDING, P. F. — Mus. Boltenianum, p. 189 (1798); also see DALL, W. H., loc. cit. p. 1074 (1900).
[4]) IREDALE, T. — Proc. Linn. Soc. N. S. Wales, XLIX, p. 207 (1924).
[5]) ADAMS, H. & A. — Gen. Rec. Moll., II, p. 459 (1897); also see DALL, W. H., loc. cit., p. 1075 (1900).
[6]) SWAINSON, W. — Treat. Malacol., p. 373 (1840), and DALL, W. H., loc. cit., p. 1076 (1900).
[7]) SWAINSON, W., — op. cit., p. 374 (1840), and DALL, W. H., loc. cit., p. 1075 (1900).

1799. *Cardium flavum* Spengler, Skrivt. Nat. Selsk., V, pl. I, fig. 2.
1802. *Cardium pectiniforme* and *C. flavum* Bosc, Hist. Nat. Coq., III, pp. 104, 106.
1817. *Cardium pectiniforme* Dillwyn, Descr. Cat., I, p. 126.
1819. *Cardium rugosum* Lamarck, Anim. sans Vertèb., VI, p. 10.
1824. *Cardium rngosum* Dubois, Epitome, p. 17.
1825. *Cardium rugosum* Sowerby, Cat. Tankerville, p. 17.
1825. *Cardium flavum* and *C. pectiniforme* Wood, Ind. Test., p. 26, pl. V, fig. 24, p. 27, pl. V, fig. 37.
1835. *Cardium rugosum* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 400.
1838. *Cardium rugosum* Sowerby, Conch. Illustr., p. 5, figs. 37, 41.
1840. *Cardium magnum* Pfeiffer, Krit. Reg., p. 60.
1842. *Cardium Rugosum* Hanley, Rec. Biv. Shells, p. 133.
1843. *Cardium rugosum* Sganzin, Cat. Coq. Ile de France, p. 8.
1844. *Cardium rugosum* Potiez & Michaud, Gal. Douai, II, p. 184.
1853. *Cardium flavum* Mörch, Cat. Yoldi, II, p. 35.
1855. *Cardium flavum* Hanley, Ipsa Linn. Conch., p. 50.
1855. *Cardium rugosum* Berge, Conchylienbuch, p. 64.
1856. *Cardium Pectiniforme* Hanley in Wood, Ind. Test., p. 35, pl. V, fig. 37.
1857. *Cardium* (*Trachycardium*) *flavum* Adams, H. & A., Gen. Rec. Moll., II, p. 455.
1867. *Cardium rugosum* Mitchell, Cat. Mus. Madras, p. 67.
1869. *Trachycardium rugosum* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 883.
1869. *Trachycardium flavum* Dunker, Cat. Mus. Godeffroy, IV, p. 112.
1869. *Cardium* (*Trachycardium*) *flavum* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X, (2), *Cardiacea*, p. 56, pl. V, fig. 10 (young), pl. VII, figs. 7, 8.
1872. *Cardium flavum* Tryon, Amer. Journ. Conch., VII, p. 261.
1877. *Cardium rugosum* Angas, Proc. Zool. Soc. London, p. 192.
1880. *Cardium* (*Trachycardium*) *rugosum* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 323.
1884. *Cardium rugosum* Grasset, Ind. Test. Viv., p. 275.
1888. *Trachycardium peregrinum* Jousseaume, Mém. Soc. Zool. France, I, p. 212.
1890. *Cardium flavum* Paetel, Cat. Conch. Samm., III, p. 115.
1891. *Cardium rugosum* and *C. flavum* Smith, Proc. Zool. Soc. London, pp. 428, 435.
1891. *Cardium pectiniforme* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 230.
1893. *Cardium peregrinnm* Dautzenberg, Bull. Soc. Zool. France, XVIII, p. 84.
1896. *Cardium* (*Trachycardium*) *flavum* (ex parte) Casto de Elera, Cat. Sist. Filip., p. 771.
1898. *Cardium rugosum* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 48.
1901. *Cardium rugosum* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 282.
1903. *Cardium flavum* Hidalgo, Obras Malacol., II, p. 335.
1905. *Cardium flavum* Hidalgo, Cat. Filip., p. 344.
1906. *Cardium flavum* Owston, Japan. Loochooan Shells, p. 39.
1906. *Cardium* (*Trachycardium*) *rugosum* Melvill & Standen, Proc. Zool. Soc. London, p. 837.
1909. *Cardium* (*Trachycardium*) *rugosum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 256.
1909. *Cardium* (*Trachycardium*) *peregrinum* Lamy, Mém. Soc. Zool. France, XXII, p. 342.
1911. *Cardium pectiniforme* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 57.
1919. *Cardium rugosum* Odhner, Arkiv Zool., XII, N⁰ 6, p. 12.
1925. *Cardium* (*Trachycardium*) *flavum* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N^0 9, p. 274.
1928. *Cardium flavum* Faustino, Summary Philippine Mar. Freshw. Moll., p. 60.
1930. *Cardium flavum* Thiele, Faun. Südwest Austral., V, p. 593.

HANLEY [1]) has discussed in detail the interpretations of the earlier authors in reference to the Linnean *Cardium flavum*. With LYNGE I adopt the Linnean name *C. flavum* for the

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1) HANLEY, S. — Ipsa Linn. Conch., p. 51 (1855).

species which has been described under the names *C. magnum* Chemnitz (non Born), *C. pectiniforme* Born, *C. regulare* Bruguière, *C. rugosum* Lam., *C. peregrinum* Jousseaume and probably *C. dupuchense* Reeve[1]). *Cardium rugosum* as figured by Reeve in the "Conch. Icon." — pl. XIV, fig. 68 — is a distinct species, and was described by Dunker[2]) under the name *C. reeveanum*.

Distribution: — *C.* (*T.*) *flavum* has a very wide range in the Indo-Papicific, and has also been recorded from the Red Sea and the Persian Gulf.

In the "Siboga" collection the species is represented by a good series of shells collected in the Bay of Labuan Tring, Lombok (St. 19), Pulu Sanguisiapo, Tawi Tawi Islands (St. 93), Sanana Bay, east coast of Sula Besi (St. 193), Saleyer Anchorage (St. 213) and West side of Taam Island (St. 252).

2. *Cardium* (*Trachycardium*) *sewelli* sp. nov. (Plate VI, figs. 25, 26).

This beautiful species, which I associate with the name of my chief, Lt. Col. R. B. Seymour Sewell, Director, Zoological Survey of India, Indian Museum, Calcutta, is closely allied to *Cardium* (*Trachycardium*) *flavum* Linn. It is distinguished, however, by the shell being much more quadrate, the anterior ventral and posterior margins almost straight, the umbones neither so prominent nor so convex, the shell more ventricose, and the number of radial ridges as many as 38 as against 28—30 in *C.* (*T.*) *flavum*. The ridges further are all ornamented with beautiful scales, which increase in size from the umbonal area to the ventral margin. The grooves between the ridges are also covered with minute scales.

Measurements of Holotype: — Length 31 mm., height 28.5 mm., diameter 21.8 mm.

Habitat: — The unique Holotype was dredged at the Anchorage off Lirung, Salibabu Island (St. 133).

3. *Cardium.* (*Trachycardium*) *subrugosum* Sowerby.

1838. *Cardium subrugosum* Sowerby, Conch. Illustr., p. 5, figs. 32, 34.
1841. *Cardium subrugosum* Sowerby, Proc. Zool. Soc. London (vol. for 1840), p. 108.
1843. *Cardium Subrugosnm* Hanley, Rec. Biv. Shells, p. 140, pl. XVII, fig. 20.
1844. *Cardium subrugosum* Reeve, Conch. Icon., II, *Cardium*, pl. XI, fig. 55.
1845. *Cardium subrugosum* Catlow & Reeve, Conch. Nomencl., p. 45.
1857. *Cardium* (*Trachycardium*) *subrugosum* Adams, H. & A., Gen. Rec. Moll., II, p. 455.
1858. *Cardium snbrugosum* Fischer, P., Journ. Conchyliol., VII, p. 338.
1860. *Cardium subrugosum* Reeve, Elem. Conch., II, p. 103.
1869. *Cardium subrugosum* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 883.
1869. *Cardium* (*Trachycardium*) *subrugosum* Dunker. Cat. Mus. Godeffroy, IV, p. 112.
1869. *Cardium* (*Trachycardium*) *subrugosum* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 53.
1872 *Cardium* (*Trachycardium*) *subrugosum* Tryon, Amer. Journ. Conch., VII, p. 263.
1884. *Cardium subrugosum* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 801.
1884. *Cardium subrugosum* Grasset, Ind. Test. Viv., p. 275.
1890. *Cardium* (*Trachycardium*) *subrugosum* Paetel, Cat. Conch. Samm., III, p. 117.
1896. *Cardium* (*Trachycardium*) *subrugosum* Casto de Elera, Cat. Sist. Filip., p. 772.
1903. *Cardium subrugosum* Hidalgo, Obras Malacol., II, p. 334.

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1) Reeve, L. — Conch. Icon., II, *Cardium*, pl. XIV, fig. 67 (1845).

2) Dunker, W. — Zeitschr. Malakozool. IX, p. 54 (1852) and Novitat. Conch., Meeresconch., p. 22, pl. VI, figs. 6—8 (1859).

1905. *Cardium subrugosum* Hidalgo, Cat. Filip., p. 345.
1911. *Cardium subrugosum* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 57.
1928. *Cardium subrugosum* Faustino, Summary Philippine Mar. Freshw. Moll., p. 62.

Cardium (*Trachycardium*) *subrugosum* is very closely allied to *C.* (*T.*) *flavum*, and may be a form of this species. The shell of *C.* (*T.*) *subrugosum*, however, is not so high, but is more quadrate and more oblique. The ridges on the shells are more angulate, their scales less strongly developed and more delicate; the posterior most ribs, further, are not so spinose.

Distribution: — *C.* (*T.*) *subrugosum* seems to be confined to the Southern Pacific Ocean.

Only a single specimen of this species was collected by the "Siboga" Expedition at Dobo, Aru Islands (St. 272).

4. *Cardium* (*Trachycardium*) *impolitum* Sowerby.

1840. *Cardium impolitum* Sowerby, Conch. Illustr., p. 4, figs. 6, 66.
1841. *Cardium impolitum* Sowerby, Proc. Zool. Soc. London (vol. for 1840), p. 107.
1841. *Cardium impolitum* Reeve, Conch. Syst., I, p. 98, pl. LXXIII, fig. 4.
1843. *Cardium Impolitum* Hanley, Rec. Biv. Shells, p. 138, pl. XVII, fig. 53.
1845. *Cardium impolitum* Reeve, Conch. Icon., II, *Cardium*, pl. XVI, fig. 80.
1845. *Cardium impolitum* Catlow & Reeve, Conch. Nomencl., p. 43.
1858. *Cardium* (*Trachycardium*) *impolitum* Adams, H. & A., Gen. Rec. Moll., II, p. 455.
1860. *Cardium impolitum* Reeve, Elem. Conch., II, p. 102.
1869. *Cardium* (*Trachycardium*) *impolitum* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 62, pl. XI, fig. 12.
1872. *Cardium* (*Trachycardium*) *impolitum* Tryon, Amer. Journ. Conch., VII, p. 262.
1884. *Cardium impolitum* Grasset, Ind. Test. Viv., p. 274.
1890. *Cardium* (*Trachycardium*) *impolitum* Paetel, Cat. Conch. Samm., III, p. 115.
1906. *Cardium* (*Trachycardium*) *impolitum* Melvill & Standen, Proc. Zool. Soc. London, p. 837.
1909. *Cardium* (*Trachycardium*) *impolitum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 257.
1911. *Cardium impolitum* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 57.

RÖMER's description of *C.* (*T.*) *impolitum* is very complete, and he is correct in his surmise that SOWERBY and REEVE's descriptions were drawn up from worn shells. The sculpture of fresh examples agrees with RÖMER's description.

Distribution: — *C.* (*T.*) *impolitum* has been recorded from Karachi, Singapore, Gulf of Siam, the China Sea and Tahiti.

In the "Siboga" collection the species is represented by shells collected at Macassar (St. 71) and Sapeh Bay, East coast of Sumbawa (St. 311).

5. *Cardium* (*Trachycardium*) *transcendens* Melvill & Standen.

1899. *Cardium* (*Trachycardium*) *transcendens* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 191, pl. XI, fig. 21.
1909. *Cardium* (*Trachycardium*) *transcendens* Melvill & Standen, Trans. Linn. Soc. London (Zool.), XIII, p. 133.

The "Siboga" specimens, which I assign to *C.* (*T.*) *transcendens*, agree with the description and figure of the species in all respects. The largest "Siboga" shell is 28.5 mm. high × 25.5 mm. long, and has over 60 ribs. The shells are of a yellowish white colour with a network of flesh coloured spots spread all over on the inner surface of the valves.

Distribution: — *C.* (*T.*) *transcendens* was described from the Torres Straits.

In the "Siboga" collection the species is represented by shells of all ages from the reef of Batjulmati, Java (St. 7), Anchorage off Pulu Sarassa, Postillon Islands (St. 43), St. 98 (6° 9′ N., 120° 21′ E., 350 metres), Banda Anchorage (St. 240), Tual Anchorage, Kei Islands (St. 258), Buka or Cyrus Bay, south coast of Rotti Island (St. 299), St. 310 (8° 30′ S., 119° 7′.5 E., 73 metres), Anchorage east of Dangar Besar, Saleh Bay (St. 313) and Anchorage east of Sailus Besar, Paternoster Islands (St. 315).

6. *Cardium* (*Trachycardium*) *unicolor* Sowerby.

1841. *Cardium unicolor* Sowerby, Proc. Zool. Soc. London (volume for 1840), p. 107.
1841. *Cardium unicolor* Sowerby, Conch. Illustr., p. 4, fig. 29.
1843. *Cardium Unicolor* Hanley, Rec. Biv. Shells, p. 138, pl. XVII, fig. 35.
1845. *Cardium unicolor* and *C. nebulosum* Reeve, Conch. Icon., II, *Cardium*, pl. XVIII, fig. 88, pl. XIX, fig. 99.
1869. *Cardium unicolor* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 64, pl. IX, figs. 22—24.
1903. *Cardium unicolor* Hidalgo, Obras Malacol., II, p. 337.
1905. *Cardium unicolor* Hidalgo, Cat. Filip., p. 345.
1928. *Cardium unicolor* Faustino, Summary Philippine Mar. Freshw. Moll., p. 62.

I have compared the type of *C.* (*T.*) *unicolor* and *C.* (*T.*) *nebulosum* and can find no differences between the shells of the two species. The longitudinally ovate, suboblique, rather solid and ventricose shell of this species is very different from usual species of the subgenus *Trachycardium*. There are 44—48 rounded, regular radial ribs on the surface, but in all the shells, which I have seen, the sculpture is altogether worn; only a few short tubercles are still present on the posterior most ribs.

Distribution: — *C.* (*T.*) *unicolor* was described from the Philippines, but I have seen typical shells of the species from the Maldives, and the species appears to be widely distributed in the Indo-Pacific.

In the "Siboga" collection it is represented from the Anchorage east of Dangar Besar, Saleh Bay (St. 313).

7. *Cardium* (*Trachycardium*) *beauforti* sp. nov. (Plate VI, figs. 27, 28).

This beautiful species, which I associate with the name of Dr. L. F. de Beaufort, Director of Zoological Museum, Amsterdam, is a very interesting species of the subgenus *Trachycardium*.

The species is closely allied to *C.* (*T.*) *unicolor* [1]) Sowerby, but is easily distinguished by its very elongately ovate shell; the altitude of the shell is about 1$^1/_3$ times its length; the very narrow and greatly arched hinge area, the very curved umbones and the regular radial sculpture. Unfortunately all the three shells of the species are rather worn and do not show the true sculpture of the species.

Measurement of Holotype: — length 27.5 mm.; height 20 mm., diameter 17.8 mm.

Habitat: — Three shells of this new species were dredged at the Anchorage off Lirung, Salibabu Island (St. 133).

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1) See Reeve, L. — Conch. Icon., II, *Cardium*, pl. XVIII, fig. 88 (1845).

8. *Cardium* (*Trachycardium*) sp.

A single greatly worn left valve from the Bay of Pidjot, Lombok (St. 33) is not easy to determine specifically. It appears to be a shell of *Cardium* (*Trachycardium*) *elongatum* Bruguière [1]), but it is impossible to be certain of this identification.

9. *Cardium* (*Ringicardium*) *mirabile* Deshayes.

1855. *Cardium mirabile* Deshayes, Proc. Zool. Soc. London, (volume for 1854), p. 332.
1884. *Cardium mirabile* Grasset, Ind. Test. Viv., p. 275.
1885. *Cardium* (*Bucardium*) *mirabile* Smith, "Challenger" Lamellibranchia, p. 159, pl. VIII, figs. 1, 1*a*—*c*.
1890. *Cardium* (*Acanthocardium*) *mirabile* Paetel, Cat. Conch. Samm., III, p. 116.
1903. *Cardium mirabile* Hidalgo, Obras Malacol., II, p. 328.
1905. *Cardium mirabile* Hidalgo, Cat. Filip., p. 344.
1905. *Cardium mirabile* Bülow, Nachrichtsbl. Deutsch. Malakozool. Ges., XXXIII, p. 81, pl. II, fig. 4*a*.
1928. *Cardium mirabile* Faustino, Summary Philippine Mar. Freshw. Moll., p. 61.

A single left valve which was picked up at Macassar (St. 71) agrees with DESHAYES' type of the species from the Philippine Islands. SMITH has figured the type shell of the species in his report on the "Challenger" Lamellibranchs.

10. *Cardium* (*Ringicardium*) *multispinosum* Sowerby.

1838. *Cardium multispinosum* Sowerby, Conch. Illustr., p. 3. figs. 38*a*, *b*.
1841. *Cardium multispinosum* Sowerby, Proc. Zool. Soc. London, (vol. for 1840), p. 106.
1843. *Cardium Multispinosum* Hanley, Rec. Biv. Shells, p, 137, pl. XVI, fig. 58.
1844. *Cardium multispinosum* Reeve, Conch. Icon., II, *Cardium*, pl. II, fig. 10.
1853. *Cardium multispinosum* Mörch, Cat. Yoldi, II, p. 34.
1857. *Cardium* (*Isocardia*) *multispinosum* Adams, H. & A., Gen. Rec. Moll., II, p. 455.
1860. *Cardium multispinosum* Reeve, Elem. Conch., II, p. 103.
1867. *Cardium multispinosum* Mitchell, Cat. Mus. Madras, p. 67.
1869. *Cardium* (*Pectunculus*) *multispinosum* Römer in Martini-Chemn., Conch.-Cab. (N. F.) X (2), *Cardiacea*, p. 67, pl. XII, figs. 1, 2.
1872. *Cardium* (*Pectunculus*) *multispinosum* Tryon, Amer. Journ. Conch., VII, p. 260.
1879. *Cardium multispinosum* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 743.
1884. *Cardium multispinosum* Smith, Rept. Voy. "Alert", p. 102.
1884. *Cardium multispinoeum* (sic) Grasset Ind. Test. Viv., p. 275.
1885. *Cardium* (*Bucardium*) *multispinosum* Smith, "Challenger" Lamellibranchia, p. 160.
1890. *Cardium* (*Acanthocardia*) *multispinosum* Paetel, Cat. Conch. Samm., III, p. 116.
1896. *Cardium* (*Acanthocardia*) *multispinosum* Casto de Elera, Cat. Sist. Filip., p. 772.
1903. *Cardium multispinosum* Hidalgo, Obras Malacol., II, p. 327.
1905. *Cardium multispinosum* Bülow, Nachrichtsbl. Deütsch. Malakozool. Ges., XXXIII, p. 8, pl. II, figs. 5*a*, *b*.
1905. *Cardium multispinosum* Hidalgo, Cat. Filip., p. 344.
1909. *Cardium* (*Bucardium*) *multispinosum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 256.
1910. *Cardium multispinosum* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1928. *Cardium multispinosum* Faustino, Summary Philippine Mar. Freshw. Moll., p. 61.
1929. *Cardium multispinosum* Dautzenberg, Faun. Colon. Français., III, p. 588.

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1) See REEVE, L. — Conch. Icon., II, *Cardium*, pl. IX, fig. 46 (1844).

The number of ribs on the shells of *C.* (*R.*) *multispinosum* is variable, and the rather small spines on the ribs also are not equally developed on all shells.

Distribution: — *C.* (*R.*) *multispinosum* was described from the Philippines, but has since been recorded from the China and Australian Seas, Gulf of Siam, Madagascar and Mozambique.

The "Siboga" specimens were collected at the Anchorage off Djangkar, Java (St. 4), and Macassar (St. 71).

11. *Cardium* (*Fragum*) *carditaeforme* Reeve.

1845. *Cardium Carditaeforme* Reeve, Conch. Icon., II, *Cardium*, pl. XXII, fig. 127.
1857. *Hemicardia* (*Fragum*) *carditaeformis* Adams, H. & A. Gen. Rec. Moll., II, p. 458.
1860. *Cardium carditaeformis* Reeve, Elem. Conch., II, p. 102.
1870. *Hemicardium* (*Fragum*) *carditaeforme* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1872. *Hemicardium* (*Fragum*) *Carditaeforme* Tryon, Amer. Journ. Conch., VII, p. 271.
1886. *Cardium carditaeforme* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 98.
1890. *Hemicardium* (*Fragum*) *carditaeforme* Paetel, Cat. Conch. Samm., III, p. 119.
1909. *Hemicardium* (*Fragum*) *carditaeforme* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 261, pl. V, figs. 21, 22.

Distribution: — This beautiful little *Cardium* was described by Reeve from shells of unknown habitat. The species has since been recorded from the Gulf of Suez, the Gulf of Siam and according to Lynge from the Andamans. Lynge has also published a good figure of the species.

The "Siboga" Expedition dredged a complete shell and a left valve of *C.* (*F.*) *carditaeforme* from the Buka or Cyrus Bay, south coast of Rotti Island (St. 299).

12. *Cardium* (*Fragum*) *unedo* Linn.

1684. *Concha pariter imbricata* etc. Bonanni, Recr. Mentis, Oculi, p. 166, fig. 375.
1685. *Pectunculus rhomboides* Lister, Hist. Conch., pl. CCCXV, fig. 151.
1741. *Fragum* etc. Rumph, Amboin. Rarit., p. 142, pl. XLIV, Fig. F.
1742. *Concha cordiformis* etc. Gualtieri, Ind. Test., pl. LXXXIII, figs. A, A, B, B.
1757. *Cordiforme Fragum* etc. d'Argenville, La Conch., pp., 294, 299, pl. XXIII, fig. N.
1758. *Halocardium, La Fraise rouge* Regenfuss, Choix Coq., pp. XVIII, XIX, pl. III, fig. 25.
1758. *Concha bivalvis a Frago dicta* Seba, Thes., III, p. 178, pl. LXXXVI, figs. 12, 12.
1758. *Cardium Unedo* Linnaeus, Syst. Nat., (ed. X), p. 680.
1764. *Cardium Unedo* Linnaeus, Mus. Lud. Ulr., p. 488.
1765. *La fraise blanche* and *La coeur de Venus* etc., Knorr, Délices Yeux, p. 54, pl. XXIX, figs. 2, 5.
1767. *Cardium Unedo* Linnaeus, Syst. Nat., (ed. XII), p. 1123.
1780. *Cardium unedo* Born, Test. Mus. Caes. Vindobon., p. 45.
1780. *Coeur* Favanne, La Conch., pl. LI, fig. 1, 2.
1782. *Fragum rubrum* Chemnitz, Conch.-Cab., VI, p. 174. pl. XVI, figs. 168, 169.
1788. *Cardium unedo* Schröter, Conch.-Cab. Namen Reg., p. 19.
1789. *Cardium unedo* Bruguière, Encyclopéd. Méthod., I, p. 214.
1790. *Cardium unedo* Gmelin, Syst. Nat., (ed. XIII), p. 3250.
1797. Bruguière, Encyclopéd. Méthod., pl. CCXCV, fig. 4.
1797. *Cardium Unedo* Humphrey, Mus. Calonnianum, p. 49.
1798. *Fragum Unedo* Röding, Mus. Boltenianum, p. 189.
1799. *Cardium* (*Hemicardium*) *unedo* Spengler, Skrivt. Nat. Selsk., V, p. 59.
1802. *Cardium unedo* Bosc, Hist. Nat. Coq., III, p. 100.
1811. *Cardium cruentum* Perry, Conchology, pl. LVII, fig. 1.

1817. *Cardium unedo* Dillwyn, Descr. Cat., I, p. 119.
1819. *Cardium unedo* Lamarck, Anim. sans Vertèb., VI, p. 14.
1824. *Cardium unedo* Dubois, Epitome, p. 77.
1825. *Cardium unedo* Sowerby, Cat. Tankerville, p. 17.
1825. *Cardium unedo* Wood, Ind. Test., p. 28, pl. V, fig. 51.
1835. *Cardium unedo* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 409.
1840. *Cardium unedo* Pfeiffer, Krit. Reg., p. 59.
1841. *Cardium unedo* Sganzin, Cat. Coq. Ile de France, etc., p. 8.
1841. *Cardium unedo* Sowerby, Conch. Illustr., p. 7.
1843. *Cardium Unedo* Hanley, Rec. Biv. Shells, p. 141.
1844. *Cardium unedo* Potiez & Michaud, Gal. Douai, II, p. 177.
1844. *Cardium unedo* Reeve, Conch. Icon., II, *Cardium*, pl. II, fig. 13.
1845. *Cardium unedo* Catlow & Reeve, Conch. Nomencl., p. 45.
1847. *Hemicardium unedo* Gray, Proc. Zool. Soc. London, p. 185.
1853. *Bucardium unedo* Gray, Ann. Mag. Nat. Hist., (2) XI, p. 40.
1853. *Fragum unedo* Mörch, Cat. Yoldi, II, p. 36.
1855. *Cardium unedo* Hanley, Ipsa Linn. Conch., p. 49.
1855. *Cardium unedo* Berge, Conchylienbuch, p. 65.
1857. *Hemicardium* (*Fragum*) *unedo* Adams, H. & A., Gen. Rec. Moll., II, p. 459.
1860. *Cardium unedo* Reeve, Elem. Conch., II, p. 103.
1862. *Cardium* (*Fragum*) *unedo* Chenu, Man. Conchyliol., II, p. 111, fig. 522.
1866. *Cardium unedo* Mabill & Le Mesle, Journ. Conchyliol., XIV, p. 118.
1867. *Cardium unedo* Mitchell, Cat. Mus. Madras, p. 67.
1869. *Cardium* (*Fragum*) *unedo* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X, (2), *Cardiacea*, p. 101, pl. IV, figs. 11, 12.
1869. *Hemicardium* (*Fragum*) *unedo* Dunker, Cat. Mus. Godeffroy, IV, p. 112.
1869. *Fragum unedo* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 884.
1872. *Hemicardium* (*Fragum*) *unedo* Tryon, Amer. Journ. Conch., VII, p. 272.
1878. *Cardium* (*Fragum*) *unedo* Kobelt, Illustr. Conchylienbuch, p. 346, pl. CI, fig. 7.
1880. *Cardium* (*Hemicardium*) *unedo* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 324.
1884. *Hemicardium unedo* Grasset, Ind. Test. Viv., p. 277.
1884. *Hemicardium* (*Fragum*) *unedo* Tryon, Struct. Syst. Conch., III, p. 195, pl. CXVI, fig. 89.
1884. *Cardium* (*Hemicardium*) *unedo* Smith, Rept. Voy. "Alert", p. 103.
1887. *Cardium* (*Hemicardium*) *unedo* von Martens, Journ. Linn. Soc. London, (Zool.), XXI, p. 210.
1887. *Cardium* (*Hemicardium-Fragum*) *unedo* Fischer, P., Man. Conchyliol., p. 1039.
1889. *Hemicardium unedo* Morlet, Journ. Conchyliol., XXXVII, p. 168.
1890. *Hemicardium* (*Fragum*) *unedo* Paetel, Cat. Conch. Samm., III, p. 119.
1891. *Cardium unedo* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 229.
1896. *Hemicardium* (*Fragum*) *unedo* Casto de Elera, Cat. Sist. Filip., 774.
1899. *Hemicardium* (*Fragum*) *unedo* Melvill & Standen, Journ. Linn. Soc. London (Zool.) XXVII, p. 192.
1900. *Hemicardium tegulatum* and *H. unedo* Dautzenberg, Journ. Conchyliol., p. 5, pl. I, figs. 3—6, p. 7.
1903. *Hemicardium Unedo* Hidalgo, Obras Malacol., II, p. 351.
1905. *Hemicardium Unedo* Hidalgo, Cat. Filip., p. 347.
1906. *Hemicardium unedo* Owston, Japan. Loochooan Shells, p. 40.
1909. *Hemicardium* (*Fragum*) *unedo* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 260.
1909. *Cardium* (*Hemicardium*) *unedo* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 468.
1910. *Cardium unedo* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1911. *Cardium unedo* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 55, 56, 57, pl. XX, fig. 9.
1916. *Cardium unedo* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 163.
1925. *Cardium* (*Fragum*) *unedo* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N⁰ 9, p. 276.
1928. *Cardium* (*Hemicardium*) *unedo* Faustino, Summary Philippine Mar. Freshw. Moll., p. 64.

All the specimens of *C.* (*F.*) *unedo* collected by the "Siboga" Expedition are half grown, but they show the characteristic shape and markings of this beautiful species.

Distribution: — *C.* (*F.*) *unedo* is widely distributed in the Indo-Pacific Region.

In the "Siboga" collection the species is represented by specimens collected at Sanana Bay, East coast of Sula Besi (St. 193), Dobo reef (Stat. 272) and Pepela Bay, East coast of Rotti Island (St. 301).

13. *Cardium* (*Fragum*) *fragum* Linn.

1685. *Pectunculus citrinus* etc., Lister, Hist. Conch., pl. CCCXV, fig. 152.
1741. *Fragum album* Rumph, Amboin. Rarit., p. 142, pl. XLIV, fig. G.
1742. *Concha cardiformis* etc., Gualtieri, Ind. Test., pl. LXXXIII, figs. E. E.
1753. *Hemicardia convexo convexa* etc., Klein, Tent. Meth. Ostracol., p. 137.
1758. *Cardium Fragum* Linnaeus, Syst. Nat., (ed. X), p. 679.
1764. *Cardium Fragum* Linnaeus, Mus. Lud. Ulr., p. 488.
1767. *Cardium Fragum* Linnaeus, Syst. Nat., (ed. XII), p. 1123.
1770. *La fraise blanche* Knorr, Délices Yeux, IV, p. 28, pl. XIV, fig. 5.
1778. *Cardium imbricatum* Born, Test. Mus. Caes. Vindobon., p. 42, pl. III, fig. 3, 4.
1782. *Fragum album seu flavum* Chemnitz, Conch.-Cab., VI, p. 171.
1788. *Cardium fragum* Schröter, Conch.-Cab. Namen Reg., p. 19.
1789. *Cardium fragum* Bruguière, Encyclopéd. Méthod., I, p. 212.
1790. *Cardium Fragum* Gmelin, Syst. Nat., (ed. XIII), p. 3249.
1797. Bruguière, Encyclopéd. Méthod., pl. CCXCV, figs. 3*a*—*c*.
1797. *Cardium nexum* Humphrey, Mus. Calonnianum, p. 49.
1798. *Fragum fragum* Röding, Mus. Boltenianum, p. 189.
1799. *Cardium* (*Hemicardium*) *fragum* Spengler, Skrivt. Nat. Selsk., V, p. 58.
1802. *Cardium fragum* Bosc, Hist. Nat. Coq., III, p. 99.
1817. *Cardium fragum* Dillwyn, Descr. Cat., I, p. 118.
1819. *Cardium fraguu* Lamarck, Anim. sans Vertèb., VI, p. 15.
1824. *Cardium fragum* Dubois, Epitome, p. 77.
1825. *Cardium Fragum* Sowerby, Cat. Tankerville, p. 117.
1835. *Cardium fragum* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 410.
1840. *Cardium* (*Hemicardium*) *fragrum* (sic), Swainson, Treat. Malacol., p. 373.
1841. *Cardium fragum* Sowerby, Conch. Illustr., p. 7.
1841. *Cardium fragum* Sganzin, Coq. Ile de France, p. 8.
1843. *Cardium fragum* Hanley, Rec. Biv. Shells, p. 142.
1844. *Cardium fragum* Reeve, Conch. Icon., II, *Cardium*, pl. IV, fig. 23.
1845. *Cardium fragum* Catlow & Reeve, Conch. Nomencl., p. 43.
1855. *Cardium fragum* Hanley, Ipsa Linn. Conch., p. 49.
1855. *Cardium fragum* Berge, Conchylienbuch., p. 65.
1856. *Cardium fragum* Hanley in Wood, Ind. Test., p. 36, pl. V, fig. 51.
1857. *Hemicardium* (*Fragum*) *fragum* Adams, H. & A., Gen. Rec. Moll., II. p. 458.
1858. *Cardium fragum* Fischer, P., Journ. Conchyliol., VII, p. 338.
1860. *Cardium fragum* Reeve, Elem. Conch., II, p. 102.
1869. *Fragum fragum* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 884.
1869. *Hemicardium* (*Fragum*) *fragum* Dunker, Cat. Mus. Godeffroy, IV, p. 112.
1869. *Cardium* (*Fragum*) *fragum* Römer in Martini-Chemn., Conch. Cab. (N. F.), X (2), *Cardiacea*, p. 105, pl. IV, figs. 9, 10.
1872. *Hemicardia* (*Fragum*) *fragum* Tryon, Amer. Journ. Conch., VII, p. 271.
1878. *Cardium* (*Fragum*) *fragum* Kobelt, Illustr. Conchylienbuch, p. 346.
1879. *Cardium fragum* von Martens, Monatsber. Kais. Akad. Wiss. Berlin, p. 743.
1880. *Cardium* (*Hemicardium*) *fragum* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 324.

1884. *Hemicardium fragum* Grasset, Ind. Test. Viv., p. 277.
1890. *Hemicardium* (*Ctenocardia*) *fragum* Paetel, Cat. Conch. Samm., III, p. 119.
1892. *Cardium* (*Hemicardium*) *fragum* Böttger, O., Nachrichtsbl. Deutsch. Malakozool. Ges., XXIV, p. 168.
1899. *Hemicardium* (*Ctenocardium*) *fragum* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 193.
1899. *Cardium fragrum* (sic), Hedley, Mem. Austral. Mus. III, pp. 504, 529.
1903. *Hemicardium Fragum* Hidalgo, Obras Malacol., II, p. 352.
1905. *Hemicardium Fragum* Hidalgo, Cat. Filip., p. 347.
1906. *Hemicardium fragum* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 465.
1906. *Cardium* (*Hemicardium*) *fragum* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 214.
1909. *Cardium* (*Ctenocardia*) *fragum* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 135.
1909. *Cardium* (*Fragum*) *fragum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 261, pl. V, fig. 20.
1910. *Cardium fragum* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1911. *Cardium fragum* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 55.
1928. *Cardium* (*Hemicardium*) *fragum* Faustino, Summary Philippine Mar. Freshw. Moll., p. 63.
1929. *Cardium* (*Hemicardium*) *fragum* Dautzenberg, Faun. Colon. Français., p. 590.

The shells of *C.* (*F.*) *fragum* collected by the "Siboga" Expedition are all half grown. The younger shells have a prominent keel, but this becomes less marked in older shells. It is apparently a character of all young shells of the species, and the varietal name *carinata* Lynge must, therefore, be relegated to the synonymy of the typical form.

Distribution: — *C.* (*F.*) *fragum* has a very wide range in the Indo-Pacific Region.

The "Siboga" Expedition collected a few dead shells from St. 95 (5° 43'.5 N., 119° 40' E., 522 metres); Anchorage off the south point of the Kabaëna Island (St. 209) and Elat, west coast of Great Kei Island (St. 261).

14. *Cardium* (*Pratulum*) *torresi* Smith.

1885. *Cardium* (*Fragum*) *torresi* Smith, "Challenger" Lamellibranchia, p. 164, pl. VIII, figs. 4, 4*b*.
1906. *Cardium* (? *Fragum*) *centumliratum* Melvill in Melvill & Standen, Proc. Zool. Soc. London, p. 839. pl. LIII, fig. 2.

After a careful examination of the types of *C. torresi* and *C. centumliratum*, I am of opinion that the latter is only based on an adult shell of the former. The different character of the sculpture of the species to which MELVILL refers in his description, is due to the types of *C. torresi* being young and weathered. MELVILL's description of the sculpture is very accurate, and needs no elaboration.

IREDALE 1) in his paper on the Roy Bell collections, separated HEDLEY's 2) var. *thetidis* as a species distinct from *C. striatulum* Sowerby and added that "the difference between this style of shell and typical *Cardium* is very great, and I, therefore, propose the new genus *Pratulum*, naming *Cardium thetidis* Hedley as type". The diagnosis of the new genus or as I consider it, subgenus has not been published so far, but as far as can be judged from the type, *Pratulum* is based mainly on the different sculpture of the shells.

Distribution: — *C.* (*P.*) *torresi* was described from the Torres Straits, while MELVILL under the name *C. centumliratum* recorded it from the Persian Gulf.

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1) IREDALE, T. — Proc. Linn. Soc. N. S. Wales, XLIX, p. 207 (1924).
2) HEDLEY, C. — Mem. Austral. Mus., IV, p. 322 (1902).

In the "Siboga" collections the species is represented by shells collected in the Bay of Pidjot, Lombok (St. 33), Bay of Bima (St. 47), Madura Bay, Molo Strait (St. 51), St. 75 (4° 57′.4 S., 119° 2′.8 E., 18 metres), St. 98 (6° 9′ N., 120° 21′ E., 350 metres), Kwandang Bay entrance (St. 114), West of Kwandang Bay entrance (St. 116) and Anchorage off Lirung, Salibabu Island (St. 133).

15. *Cardium* (*Ctenocardia*) *symbolicum* (Iredale).

1844. *Cardium hystrix* Reeve, Conch. Icon., II, *Cardium*, pl. VIII, figs. 40*a*, *b*.
1845. *Cardium hystrix* Reeve, Proc. Zool. Soc. London (vol. for 1844) p. 168.
1856. *Cardium hystrix* Hanley, Rec. Biv. Shells, Appendix, p. 366, pl. XVII, fig. 46.
1857. *Hemicardia* (*Ctenocardia*)) *hystrix* Adams, H. & A., Gen. Rec. Moll., II, p. 459.
1860. *Cardium hystrix* Reeve, Elem. Conch., II, p. 102.
1862. *Cardium* (*Ctenocardia*) *hystrix* Chenu, Man. Conchyliol., II, p. 112, figs. 523, 526.
1869. *Cardium* (*Fragum*) *Histrix* (sic) Römer in Martini-Chemn., Conch.-Cab. N. F., X (2), *Cardiacea*, p. 112.
1872. *Hemicardium* (*Fragum*) *hystrix* Tryon, Amer. Journ. Conch., VII, p. 271.
1878. *Cardium hystrix* Smith, Proc. Zool. Soc. London, p. 819.
1884. *Cardium hystrix* Smith, Rept. Voy. "Alert", p. 101.
1884. *Hemicardium* (*Ctenocardia*) *hystrix* Tryon, Struct. Syst. Conch., III, p. 195, pl. CXVI, figs. 90, 91.
1887. *Cardium* (*Hemicardia-Ctenocardia*) *hystrix* Fischer, P., Man. Conchyliol., p. 1039.
1890. *Hemicardium* (*Ctenocardia*) *hystrix* Paetel, Cat. Conch. Samm., III, p. 119.
1896. *Hemicardia* (*Ctenocardia*) *hystrix* Casto de Elera, Cat. Sist. Filip., p. 774.
1900. *Cardium* (*Hemicardium-Ctenocardia*) *hystrix* Dall, Proc. U. S. Nat. Mus., XXIII, p. 384.
1903. *Hemicardium hystrix* Hidalgo, Obras Malacol., II, p. 354.
1905. *Hemicardium hystrix* Hidalgo, Cat. Filip., p. 347.
1910. *Cardium hystrix* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1929. *Fragum* (*Ctenocardia*) *symbolicum* Iredale, Mem. Qneensland Mus., IX, p. 264.

Iredale has recently replaced the name *Cardium hystrix* Reeve by *Fragum* (*Ctenocardia*) *symbolicum*, as the former name is preoccupied by Solander [1]).

Distribution: — *C.* (*C.*) *symbolicum* has so far been recorded from the Philippines and Australian waters.

In the "Siboga" collection there is a single young valve of the species collected at Macassar (St. 71).

16. *Cardium* (*Ctenocardia*) *fornicatum* Sowerby.

1840. *Cardium fornicatum* Sowerby, Proc. Zool. Soc. London, p. 110.
1841. *Cardium fornicatum* Sowerby, Conch. Illustr., p. 7, figs. 50, 50*a*, *b*.
1843. *Cardium Fornicatum* Hanley, Rec. Biv. Shells, p. 143, pl. XVII, fig. 49.
1845. *Cardium fornicatum* Catlow & Reeve, Conch. Nomencl., p. 43.
1845. *Cardium fornicatum* and *C. virgo* Reeve, Conch. Icon., II, *Cardium*, pl. XX, fig. 110, pl. XXI, fig. 120.
1850. *Cardium Adamsii* Adams & Reeve, "Samarang" Moll., p. 77, pl. XXII, fig. 2.
1857. *Hemicardia* (*Ctenocardia*) *fornicata* Adams, H. & A., Gen. Rec. Moll., II, p. 459.
1860. *Cardium fornicatum* Reeve, Elem. Conch., II, p. 102.
1869. *Cardium* (*Fragum*) *fornicatum* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X, (2,) *Cardiaeea*, p. 105.
1869. *Hemicardium* (*Ctenocardia*) *Adamsii* Dunker, Cat. Mus. Godeffroy, IV, p. 112.

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1) Solander, D. C. — Cat. Portland Mus., p. 116 (1786).

1870. *Hemicardia* (*Ctenocardia*) *fornicatum* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1872. *Hemicardia* (*Fragum*) *fornicata* Tryon, Amer. Journ. Conch., VII, p. 271.
1884. *Hemicardium Adamsi* and *H. formicatum* (sic) Grasset, Ind. Test. Viv., pp. 276, 277.
1885. *Cardium* (*Fragum*) *fornicatum* Smith, "Challenger" Lamellibranchia, p. 164.
1886. *Cardium fornicatum* Cooke, Ann. Mag. Nat Hist., (5) XVIII, p. 98.
1890. *Hemicardium* (*Ctenocardia*) *fornicatum* Paetel, Cat. Conch. Samm., III, p. 119.
1897. *Cardium Adamsi* Sowerby, Mar. Shells S. Africa, Supplement, p. 25.
1899. *Hemicardium* (*Ctenocardium*) *fornicatum* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 193.
1901. *Cardium fornicatum* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 283.
1903. *Cardium* (*Ctenocardia*) *fornicatum* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 625.
1906. *Hemicardium* (*Ctenocardium*) *Adamsi* Melvill & Standen, Proc. Zool. Soc. London, p. 840.
1906. *Cardium fornicatum* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 262.
1909. *Cardium* (*Ctenocardium*) *fornicatum* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 135.
1909. *Hemicardium* (*Ctenocardium*) *fornicatum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 261.
1910. *Cardium fornicatum* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.

As SMITH and LYNGE have pointed out, *C. adamsii* Adams & Reeve and *C. virgo* Reeve are both synonyms of *C.* (*C.*) *fornicatum*. SMITH remarked on the peculiar sculpture of the species, but as LYNGE pointed out it is often impossible to distinguish shells of this species from those of *C.* (*C.*) *imbricatum* Sowerby = *perornatum* (Iredale). I have examined a number of shells of both the species and find that the spines of *C.* (*C.*) *fornicatum* are much finer and more closely pressed against the ridges, while those of *C.* (*C.*) *perornatum* are more distantly placed, comparatively larger and better developed.

Distribution: — *C.* (*C.*) *fornicatum* is widely distributed in the Indo-Pacific, and has also been recorded from the Red Sea.

In the "Siboga" collection it is represented by specimens collected in the Bay of Bima (St. 47), Bay of Badjo, west coast of Flores (St. 50), Haingsisi, Samau Island, Timor (St. 60), Anchorage off North Ubian (St. 99) and Sulu Harbour, Sulu Island (St. 104).

17. *Cardium* (*Ctenocardia*) *translatum* nom. nov.

1845. *Cardium rigidum* Reeve (non Wood[1]), Conch. Icon., II, *Cardium*, pl. XX, fig. 105.

REEVE's figure of *C. rigidum* is so entirely different from that of WOOD, that there is every reason to doubt whether REEVE's figure and description of the species was based on WOOD's specimens of the species. The form of the shell, the number of ribs and the sculpture are so different in REEVE's species, that I consider it quite distinct from WOOD's *rigidum* and propose for it the name *Cardium* (*Ctenocardium*) *translatum*.

There are in all 32—38 radial ribs on the shells of this species and the scales on the ribs resemble those of *C.* (*C.*) *fornicatum* Sowerby.

Distribution: — The habitat of REEVE's types of the species was not know. The two valves in the "Siboga" collection were collected in the Bay of Bima (St. 47).

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[1] WOOD, W. — Gen. Conch., p. 236, pl. LVII, figs. 2, 3 (1815).

18. *Cardium* (*Ctenocardia*) *perornatum* (Iredale).

1840. *Cardium imbricatum* Sowerby (nec Born), Proc. Zool. Soc. London, p. 110.
1841. *Cardium imbricatum* Sowerby, Conch. Illustr., p. 7, fig. 48.
1843. *Cardium Imbricatum* Hanley, Rec. Biv. Shells, p. 143, pl. XVII, fig. 42.
1844. *Cardium imbricatum* Reeve, Conch. Icon., II, *Cardium*, pl. V, fig. 28.
1845. *Cardium imbricatum* Catlow & Reeve, Conch. Nomencl., p. 43.
1857. *Hemicardia* (*Ctenocardia*) *imbricata* Adams, H. & A., Gen. Rec. Moll., II, p. 459.
1860. *Cardium imbricatum* Reeve, Elem. Conch., II, p. 102.
1869. *Cardium* (*Fragum*) *imbricatum* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 105.
1872. *Hemicardium* (*Fragum*) *imbricata* Tryon, Amer. Journ. Conch., VII, p. 271.
1885. *Cardium* (*Fragum*) *imbricatum* Smith, "Challenger" Lamellibranchia., p. 164.
1890. *Hemicardium* (*Ctenocardia*) *imbricatum* Paetel, Cat. Conch. Samm., III, p. 119.
1899. *Hemicardium* (*Ctenocardia*) *imbricatum* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 193.
1909. *Hemicardium* (*Ctenocardia*) *imbricatum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 262.
1910. *Cardium imbricatum* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1911. *Cardium imbricatum* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 55.
1929. *Fragum* (*Ctenocardia*) *perornatum* Iredale, Mem. Queensland Mus., IX, p. 264.

IREDALE has suggested the name *Fragum* (*Ctenocardia*) *ornatum* to replace SOWERBY's *Cardium imbricatum*, as the latter name had already been used by BORN [1]).

I cannot agree with LYNGE that *C.* (*C.*) *hystrix* = *C.* (*C.*) *symbolicum* (Iredale) "approaches somewhat *Card. imbricatum*". The form of the shells is similar, but the sculpture of *C.* (*C.*) *symbolicum*, which consists of strongly developed spines, at once separates it from other allied species.

Distribution: — *C.* (*C.*) *perornatum* has been recorded from the Australian waters and Gulf of Siam.

In the "Siboga" collection there a large number of shells of all ages collected at Anchorage off Djangkar, Java (St. 4), Bay of Pidjot, Lombok (St. 33), Bay of Bima (St. 47), Kambaragi Bay, Tanah Djampeah (St. 64), Macassar (St. 71), Sulu Harbour, Sulu Island (St. 104), Anchorage off Lirung, Salibabu Island (St. 133), St. 164 (1° 42′.5 S., 130° 47′.5 E., 32 metres) and Lohio Bay, Buton Strait (St. 205).

19. *Cardium* (*Ctenocardia*) *victor* Angas.

1872. *Cardium* (*Ctenocardia*) *victor* Angas, Proc. Zool. Soc. London, p. 612, pl. XLII, fig. 9.
1880. *Cardium* (*Ctenocardia*) *victor* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 324.
1890. *Hemicardium* (*Fragum*) *Victor* Paetel, Cat. Conch. Samm., III, p. 119.
1903. *Cardium* (*Ctenocardia*) *victor* Smith, Fauna Geogr. Maldive, Laccadive Archipel., II, p. 625.
1904. *Cardium* (*Ctenocardia*) *victor* Smith, Ann. Mag. Nat. Hist., (7) XIV, p. 9.
1909. *Cardium* (*Ctenocardia*) *victor* Melvill, Trans. Linn. Soc. London (Zool.) XIII, p. 135.
1911. *Cardium* (*Ctenocardia*) *victor* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 132.

The sculpture of *C.* (*C.*) *victor*, as SMITH pointed out, is peculiar in that the ribs are "alternately longer and smaller". It would, however, be more accurate to describe these ribs as alternately more raised; the higher ribs are squamate and bear short spines, while the alternating low ribs are only delicately scaled. All the ribs on the posterior part of the shell, however, are spinose.

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[1]) BORN, I. VON. — Ind. Test. Mus. Caes. Vindobon., p. 29 (1778).

Distribution: — *C.* (*C.*) *victor* was described from Mauritius, but has also been recorded from other localities in the Indian Ocean.

In the "Siboga" collection there is a single young shell of this beautiful species dredged between the Islands of Wowoni and Buton, northern entrance of Buton Strait (St. 204).

20. *Cardium* (? *Ctenocardia*) *festivum* Deshayes. (Plate VI, figs. 29—32).

1855. *Cardium festivum* Deshayes, Proc. Zool. Soc. London (volume for 1854), p. 332.
1884. *Cardium festivum* Grasset, Ind. Test. Viv., p. 274.
1890. *Cardium* (*Cerastoderma*) *festivum* Paetel, Cat. Conch. Samm., III, p. 115.

C. festivum is a species of small size. Its shell is fairly thick, compact and somewhat quadrate in outline. The surface of the shell is ornamented with evenly developed and somewhat rounded radial ribs; these are delicately squamate. In older shells the scales are often rubbed off and the shell surface appears smooth. I figure two shells of this species.

The subgeneric position of this species is rather doubtful. In its form and general facies it closely resembles such species as *C.* (*C.*) *fornicatum*, but the sculpture is very poorly developed, and I am doubtful whether it can be assigned to the subgenus *Ctenocardia* H. & A. Adams.

Distribution: — *C.* (? *C.*) *festivum* was described from New Ireland. There is also in the British Museum collection a shell of this species from Fiji.

The "Siboga" shells, which I after comparison with the types assign to this species, were collected in the Bay of Pidjot, Lombok (St. 33), Sailus Ketjil, Paternoster Islands (St. 37), Bay of Badjo, West coast of Flores (St. 50) and the Anchorage between Nusa Besi and N. E. point of Timor (St. 282).

21. *Cardium* (*Laevicardium*) *aurantiacum* Adams & Reeve.

1850. *Cardium aurantiacum* Adams & Reeve, "Samarang" Moll., p. 77, pl. XXII, fig. 4.
1860. *Cardium aurantiacum* Reeve, Elem. Conch., II, p. 102.
1890. *Laevicardium aurantiacum* Paetel, Cat. Conch. Samm., III, p. 118.
1906. *Cardium* (*Laevicardium*) *aurantiacum* Melvill & Standen, Proc. Zool. Soc. London, p. 839.

I refer a single somewhat weathered valve dredged at St. 98 (6° 9′ N., 120° 21′ E., 350 meters) to *C.* (*L.*) *aurantiacum*. The measurements of this valve are: — Height 29 mm., Length 27.8 mm.; and it agrees in shape with the figure of the species by Adams and Reeve.

22. *Cardium* (*Laevicardium*) *biradiatum* Bruguière.

1782. *Cardium laevigatum* etc. Chemnitz, (non Linn.), Conch.-Cab., VI, p. 191, pl. XVIII, figs. 185, 186.
1784. *Cochlea columbina* Martijn, Univ. Conch., III, p. 146.
1788. *Cardium laevigatum* Schröter. (non Linn.), Conch.-Cab. Namen Reg., p. 19.
1789. *Cardium biradiatum* Bruguière, Encycloped. Méthod., II, p. 231.
1790. *Cardium serratum* Gmelin (non Linn., ex parte), Syst. Nat., (ed, XIII), p. 3251.
1797. Bruguière, Encycloped. Méthod., pl. CCXCVIII, fig. 6.
1817. *Cardium serratum* Dillwyn (non Linn.), Descr. Cat., I, p. 124.

1819. *Cardium biradiatum* Lamarck, Anim. sans Vertèb., VI, fig. 8.
1824. *Cardium biradiatum* Dubois, Epitome, p. 77.
1825. *Cardium biradiatum* Sowerby, Cat. Tankerville, p. 17.
1835. *Cardium biradiatum* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 404.
1840. *Cardium biradiatum* Pfeiffer, Krit. Reg., p. 60.
1841. *Cardium biradiatum* Sowerby, Conch. Illustr., p. 5.
1843. *Cardium Biradiatum* Hanley, Rec. Biv. Shells, p. 133, pl. XVII, fig. 2.
1844. *Cardium biradiatum* Reeve, Conch. Icon., II, *Cardium*, pl. X, fig. 49.
1845. *Cardium biradiatum* Catlow & Reeve, Conch. Nomencl., p. 42.
1857. *Cardium (Laevicardium) biradiatum* Adams, H. & A., Gen. Rec. Moll., II, p. 457.
1860. *Cardium biradiatum* Reeve, Elem. Conch., II, p. 102.
1869. *Cardium biradiatum* von Martens, von d. Deckens Reise, p. 66.
1869. *Cardium (Laevicardium) biradiatum* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 87, pl. III, figs. 5, 6.
1872. *Cardium (Laevicardium) biradiatum* Tryon, Amer. Journ. Conch., VII, p. 268.
1880. *Cardium biradiatum* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 323.
1884. *Laevicardium biradiatum* Grasset, Ind. Test. Viv. p. 276.
1886. *Cardium biradiatum* Cooke, Ann. Mag. Nat: Hist., (5) XVIII, p. 97.
1890. *Cardium (Laevicardium) biradiatum* Paetel, Cat. Conch. Samm., III, p. 118.
1899. *Cardium (Laevicardium) biradiatum* Melvill & Standen, Journ. Linn. Soc. London Zool., XXVII. p. 192.
1901. *Laevicardium biradiatum* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 283.
1903. *Cardium (Laevicardium) biradiatum* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 625.
1903. *Laevicardium biradiatum* Hidalgo, Obras Malacol., II, p. 349.
1905. *Laevicardium biradiatum* Hidalgo, Cat. Filip., p. 346.
1909. *Cardium (Laevicardium) biradiatum* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 134.
1910. *Cardium biradiatum* Hedley, Austral. Ass. Adv. Sci. XII, p. 348.
1911. *Cardium biradiatum* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 132.
1911. *Cardium biradiatum* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 55, 56.
1917. *Cardium (Laevicardium) biradiatum* Odhner, Kungl. Svensk. Akad. Handl., LII, N⁰ 16, p. 28.
1928. *Cardium (Laevicardium) biradiatum* Faustino, Summary Philippine Mar. Freshw. Moll., p. 62.

The characteristic pink rays radiating from the umbones on the inside of the shell, and in reference to which the species was named *biradiatum*, are not always well marked. The species can, however, be easily recognised by its comparatively very narrow and greatly arched hinge and notwithstanding the low radiating ridges on the surface an almost smooth shell.

Distribution: — *C.* (*L.*) *biradiatum* is widely distributed in the Indo-Pacific, and has also been recorded from the Red Sea.

In the "Siboga" collection it is represented by specimens collected at the reef of Batjulmati, Java (St. 7), Anchorage off Pulu Sarassa, Postillon Islands (St. 43), Anchorage off North Ubian (St. 99), Banda Anchorage (St. 240), Anchorage east of Dangar Besar, Saleh Bay (St. 313) and Anchorage east of Sailus Besar, Paternoster Islands (St. 315).

23. *Cardium (Laevicardium) australe* Sowerby.

1834. *Cardium Australe* Sowerby, Conch. Illustr., p. 1, figs. 12, 12*.
1841. *Cardium Australe* Sowerby, Proc. Zool. Soc. London (vol. for 1840), p. 105.
1841. *Cardium australe* Reeve, Conch. Syst., I, p. 99, pl. LXXV, figs. 12, 12*.
1843. *Cardium Australe* Hanley, Rec. Biv. Shells, p. 135, pl. XVII, fig. 37.

1845. *Cardium Australe* and *C. pulchrum* Reeve, Conch. Icon., II, *Cardium*, pl. XIX, figs. 97, 98.
1845. *Cardium australe* Catlow & Reeve, Conch. Nomencl., p. 42.
1857. *Cardium* (*Laevicardium*) *australe* Adams, H. & A., Gen. Rec. Moll., II, p. 457.
1860. *Cardium Australe* Reeve, Elem. Conch., II, p. 102.
1869. *Cardium* (*Pectunculus*) *australe* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 70, pl. XII, figs. 8, 9.
1869. *Laevicardium australe* Dunker, Cat. Mus. Godeffroy, IV, p. 112.
1872. *Cardium* (*Pectunculus*) *Australe* Tryon, Amer. Journ. Conch., VII, p. 260.
1878. *Cardium* (*Laevicardium*) *australe* Smith, Proc. Zool. Soc. London, p. 819.
1879. *Cardium* (*Fulvia*) *pulchrum* Smith, Phil. Trans. Roy. Soc. London, LI, p. 476.
1880. *Cardium* (*Papyridea*) *pulchrum* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 324.
1881. *Laevicardium pulchrum* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 13.
1884. *Cardium australe* and *C. pulchrum* Grasset, Ind. Test. Viv., pp. 274, 275.
1884. *Cardium* (*Papyridea*) *pulchrum* Smith, Rept. Voy. "Alert", p. 507.
1885. *Cardium* (*Bucardium*) *australe* Smith, "Challenger" Lamellibranchia., p. 160.
1890. *Cardium Australe* Paetel, Cat. Conch. Samm., III, p. 114.
1890. *Cardium* (*Cerastoderma*) *pulchrum* Paetel, op. cit., p. 116.
1891. *Cardium australe* Smith, Proc. Zool. Soc. London, p. 428.
1898. *Cardium australe* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 48.
1901. *Cardium australe* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 283.
1902. *Cardium Australe* Shopland, Proc. Malacol. Soc. London, V, p. 178.
1903. *Cardium* (*Laevicardium*) *australe* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 625.
1903. *Cardium australe* Hidalgo, Obras Malacol., II, p. 342.
1905. *Cardium australe* Hidalgo, Cat. Filip., p. 343.
1906. *Cardium australe* Melvill & Standen, Proc. Zool. Soc. London, p. 837.
1909. *Cardium* (*Papyridea*) *australe* Melvill, Trans. Linn. Soc. London (Zool.), LXIII, p. 133.
1909. *Cardium* (*Laevicardium*) *australe* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 259.
1911. *Cardium australe* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 56, 57.
1928. *Cardium australe* Faustino, Summary Philippine Mar. Freshw. Moll., p. 60.

C. (*L.*) *australe* is closely allied to *C.* (*L.*) *tenuicostatum* Lam., but, as SMITH pointed out, it is much higher in proportion to its length; its umbones are more prominent, and the shell surface is smoother and more glossy. As LYNGE pointed out, epidermal remains are to be seen on the valves especially on the anterior and posterior parts of the valves and between the radiating ribs.

Distribution: — *C.* (*L.*) *australe* is widely distributed in the Indo-Pacific; a detailed list of its records was published by LYNGE in the paper cited.

The "Siboga" collection contains shells from the Bay of Pidjot, Lombok (St. 33), Bay of Badjo, west coast of Flores (St. 50), Kambaragi Bay, Tanah Djampeah (St. 64), Macassar (St. 71), Borneo Bank (St. 80), North Bay, Biaru Island (St. 123), Wunoh Bay, N. W. coast of Waigeu Island (St. 152), Anchorage off Kampong Kelang, south coast of Manipa Island (St. 184), Banda Anchorage (St. 240), Tual Anchorage, Kei Islands (St. 258), Rumah Kuda Bay, Roma Island (St. 279), Sapeh Bay, east coast of Sumbawa (St. 311) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

23. *Cardium* (*Papyridea*) *hungerfordi* Sowerby.

1901. *Cardium* (*Papyridea*) *Hungerfordi* Sowerby, Journ. Malacol., VIII, p. 103, pl. IX, fig. 5.
1904. *Cardium hungerfordi* Pilsbry, Proc. Acad. Nat. Sci. Philadelphia, LVI, p. 555, pl. XLI, fig. 17.

1906. *Cardium hungerfordi* Owston, Japan. Loochooan Shells, p. 39.
1909. *Cardium* (*Papyridea*) *hungerfordi* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p, 259.

The distinguishing characters of *C.* (*P.*) *hungerfordi* have been described by LYNGE. I have compared the "Siboga" shells with the types of the species from Japan, and find that the "Siboga" shells are generally larger, more inflated, and their post-umbonal region is comparatively shorter. The sculpture also varies in reference to the development of ridges on the anterior and posterior parts of the shell.

Distribution: — *C.* (*P.*) *hungerfordi* has been recorded from Japan and the Gulf of Siam.

In the "Siboga" collection the species is represented by shells collected at the Anchorage off Djangkar (St. 4), Bay of Pidjot (St. 33), Bay of Nangamessi, Sumba (St. 53), Macassar (St. 71), Kwandang Bay entrance (St. 114), St. 164 (1° 42′.5 S., 130° 47′.5 E., 32 metres) and Waru Bay, north coast of Ceram (St. 174).

24. *Cardium* (*Papyridea*) *apertum* Bruguière.

1781. *Cardium Rugatum* Gronovius, Zoophylacium, III, pp. V, 266, pl. XVIII, fig. 5.
1782. *Cardium apertum* etc. Chemnitz, Conch.-Cab., VI, p. 189, pl. XVIII, figs. 181—183.
1789. *Cardium apertum* Bruguière, Encycloped. Méthod., I, p. 226.
1790. *Cardium virgineum* var. *B.* Gmelin, Syst. Nat., (ed. XIII), p. 3253.
1797. Bruguière, Encycloped. Méthod., pl. CCXCVI, figs. 5*a*, *b*.
1817. *Cardium rugatum* and *C. tenerum* Dillwyn, Descr. Cat., I, p. 125.
1819. *Cardium apertum* Lamarck, Anim. sans Vertèb., VI, p. 5.
1824. *Cardium apertum* Dubois, Epitome, p. 76.
1825. *Cardium apertum* Wood, Ind. Test., pl. V, fig. 35.
1840. *Cardium apertum* Pfeiffer, Krit. Reg., p. 60.
1840. *Cardium* (*Papyridea*) *apertum* Swainson, Treat. Malacol., p. 374.
1841. *Cardium apertum* Sowerby, Conch. Illustr., p. 1.
1843. *Cardium Apertum* Hanley, Rec. Biv. Shells, p. 130.
1844. *Cardium rugatum* Reeve, Conch. Icon., II, *Cardium*, pl. XII, figs. 63*a*, *b*.
1845. *Cardium apertum* Catlow & Reeve, Conch. Nomencl., p. 42.
1852. *Cardium* (*Papyridea*) *apertum* Sowerby, Man. Conch., pp. 230, 334, pl. XXIV, figs. 503, 504.
1853. *Fulvia aperta* Gray, Ann. Mag. Nat. Hist., (2) XI, p. 40.
1853. *Papyridea bullatum* Mörch (non Linn.), Cat. Yoldi, II, p. 33.
1856. *Cardium apertum* Hanley in Wood, Ind. Test., p. 34, pl. 5, fig. 35.
1857. *Papyridea* (*Fulvia*) *bullata* Adams, H. & A., (non Linn.), Gen. Rec. Moll., II, p. 457.
1860. *Cardium rugatum* Reeve, Elem. Conch., II, p. 103.
1867. *Papyridea rugata* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 884.
1869. *Cardium* (*Papyridea*) *rugatum* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 77, pl. III, figs. 1—3.
1871. *Cardium apertum* Lischke, Japan. Meeresconch., II, p. 173.
1872. *Papyridea aperta* Tryon, Amer. Journ. Conch., VII, p. 267.
1874. *Cardium rugatum* Lischke, Japan, Meeresconch., III, p. 106.
1882. *Cardium apertum* Dunker, Ind. Moll. Mar. Japon., p. 212.
1884. *Cardium apertum* Grasset, Ind. Test. Viv., p. 274.
1887. *Cardium* (*Papyridea*) *aperta* Fischer, P., Man. Conchyliol., p. 1038.
1887. *Cardium* (*Papyridea*) *rugatum* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 210.
1890. *Papyridea rugata* Paetel, Cat. Conch. Samm., III, p. 118.
1895. *Cardium apertum* Pilsbry, Cat. Mar. Moll. Japan, p. 131.
1896. *Papyridea* (*Fulvia*) *rugata* Casto de Elera, Cat. Sist. Filip., p. 774.
1900. *Cardium* (*Papyridea-Fulvia*) *apertum* Dall, Proc. U. S. Nat. Mus., XXIII, p. 384.

1903. *Papyridea rugata* Hidalgo, Obras Malacol., II, p. 343.
1905. *Papyridea rugata* Hidalgo, Cat. Filip., p. 346.
1906. *Cardium apertum* Owston, Japan. Loochooan Shells, p. 39.
1909. *Cardium* (*Papyridea*) *rugatum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 258.
1911. *Papyridea rugata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 57, pl. XXI, fig. 5.

C. (*P.*) *apertum* is the type of the section *Fulvia* Gray [1]), which is distinguished from *Papyridea s. s.*, by the margin of the gape being entire and not serrated.

The species varies greatly in reference to its sculpture. The radial thread-like ridges may be quite prominent and the middle of the shell below the umbones decussated. In other shells, however, there are only a few distinct ridges on the anterior and posterior regions of the valves, while the rest of it appears almost smooth. The colour of the shells is also variable.

Distribution: — *C.* (*P.*) *apertum* has been recorded from Japan to Java in the Pacific Ocean and as far west as the Mergui Archipelago in the Indian Ocean.

In the "Siboga" collection it is represented by shells collected in the Bay of Pidjot, Lombok (St. 33), Bay of Bima (St. 47), Sulu Harbour, Sulu Island (St. 104), Anchorage off Lirung, Salibabu Island (St. 133), Banda Anchorage (St. 240), Buka or Cyrus Bay, south coast of Rotti Island (St. 299).

Genus **Corculum** Röding.

1798. *Corculum* Röding, Mus. Boltenianum, p. 188.
1799. *Hemicardia* Spengler, Skr. Nat. Selsk., V, pp. 48, 53.
1811. *Cardissa* Megerle, Mag. Ges. Naturf. Freunde Berlin, V, p. 52.
1822. *Hemicardium* Férrusac, Tabl. Syst., p. XLIII.
1857. *Hemicardia* Adams, H. & A., Gen. Rec. Moll., II, p. 458.
1887. *Hemicardia* Fischer, P., Man. Conchyliol., p. 1058.
1900. *Corculum* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1077.
1930. *Corculum* and *Hemicardium* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, pp. 269, 270.

The differences between *Corculum* Röding and *Hemicardium* Spengler, as the two genera are restricted by Stewart, are not of any importance and I have, therefore, united the two under the older *Corculum*. The genotype of *Corculum* is *Corculum cardissa* (Linn.) designated by von Martens in 1870.

1. *Corculum cardissa* (Linn.). (Plate VI, figs. 33, 34).

1685. *Pectunculus maculatus* etc. Lister, Hist. Conch., pl. CCCXVIII, fig. 155.
1741. *Chama Cardissa* Rumph., Amboin. Rarit., p. 132, pl. XLIII, fig. E.
1742. *Concha Cordiformis* etc. Gualtieri, Ind. Test., pl. LXXXIV, figs. B, B, C, D.
1753. *Hemicardia convexo convexa* etc., Klein, Tent. Meth. Ostr., p. 137.
1757. *Cor hominis seu Veneris* D'Argenville, La Conch., pp. 294, 299, pl. XXIII, fig. 1, pl. LI, fig. E 2.
1758. *Cardium Cardissa* Linnaeus, Syst. Nat., (ed. X), p. 678.
1764. *Moule en Coeur* Knorr, Délices Yeux, I, p. 34, pl. XVIII, figs. 3, 4.
1764. *Cardium Cardissa* Linnaeus, Mus. Lud. Ulr., p. 484.

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1) Gray, J. E. — Ann. Mag. Nat. Hist., (2) XI, p. 40 (1853) see also Dall, W. H. — Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1076 (1900).

1767. *Cardium Cārdissa* Linnaeus, Syst. Nat. (ed. XII), p. 1121.

1780. *Cardium cardissa* Born (ex parte), Test. Mus. Caes. Vindobon., p. 40, pl. II, figs. 17, 18.

1780. *Coeur* Favanne, La Conch., pl. LI, fig. E 2.

1782. *Cardium cardissa Linnaei* Chemnitz., Conch.-Cab., VI, p. 150, pl. XIV, figs. 143, 144.

1788. *Cardium cardissa* Schröter, Conch.-Cab. Namen Reg., p. 19.

1788. *Cardium cardissa* Barbut, Gen. Verm., pl. III, fig. 8.

1789. *Cardium cardissa* Bruguière, Encycloped. Méthod., p. 208.

1790. *Cardium Cardissa* Gmelin, Syst. Nat., (ed. XIII), p. 3245.

1797. Bruguière, Encyclopéd. Méthod., pl. CCXCIII, figs. 3*a*, *b*.

1797. *Cardium denticulatum* Humphrey, Mus. Calonnianum, p. 49.

1798. *Cardium Cardissa* Röding, Mus. Boltenianum, p. 188.

1799. *Cardium* (*Hemicardium*) *cardissa* Spengler, Skrivt. Nat. Selsk., V, p. 48

1802. *Cardium cardissa* Bosc, Hist. Nat. Coq., III, p. 98, pl. XVI, fig. 1.

1805. *Cardium cardissa* de Roissy, Hist. Nat. Coq., VI, p. 379.

1817. *Cardium Cardissa* Dillwyn, Descr. Cat., I, p. 110.

1817. *Cardium Cardissa* Schumacher, Essai Nouv. Syst., p. 160.

1819. *Cardium Cardissa* Lamarck, Anim. sans Vertèb., VI, p. 16.

1824. *Cardium cardissa* Dubois, Epitome, p. 77.

1825, *Cardium Cardissa* Sowerby, Cat. Tankerville, p. 17.

1830. *Cardium Cardissa* Sowerby, Gen. Shells, II, figs. 5, 5.

1835. *Cardium cardissa* Deshayes in Lamarck Anim. sans Vertèb., VI, p. 411.

1840. *Cardium cardissa* Pfeiffer, Krit. Reg., p. 59.

1841. *Cardium Cardissa* Sowerby, Conch. Illustr., p. 7.

1841. *Cardium cardissa* Reeve, Conch. Syst., I, p. 98, pl. LXXIII, figs. 1, 1^*, 1^{**}.

1841. *Cardium cardissa* Sganzin, Cat. Coq. Ile de France, p. 8.

1843. *Cardium Cardissa* Hanley, Rec. Biv. Shells, p. 143.

1844, *Hemicardium Cardissa* Potiez & Michaud, Gal. Douai, II, p. 187.

1844. *Cardium cardissa* Reeve (ex parte), Conch. Icon., II, *Cardium*, pl. III, figs. 15*d*, *e*.

1845. *Cardium cardissa* Catlow & Reeve, Conch. Nomencl., p. 42.

1847. *Cardissa cardissa* Gray, Proc. Zool. Soc. London, p. 185.

1853. *Cardium cardissa* Gray, Ann. Mag. Nat. Hist., (2) XI, p. 41.

1853. *Cardium* (*Cardissa*) *cardissa* Philippi, Handbuch Conch. Malacol., p. 338.

1853. *Hemicardium cardissa* Mörch, Cat. Yoldi, II, p. 36.

1855. *Hemicardium cardissa* Berge, Conchylienbuch, p. 65, pl. VI, fig. 9.

1855. *Cardium Cardissa* Hanley, Ipsa Linn. Conch., p. 46.

1856. *Cardium cardissa* Hanley in Wood, Ind. Test., p. 36, pl. V, fig. 53.

1857. *Hemicardia cardissa* Adams, H. & A., Gen. Rec. Moll., II, p. 458, pl. CXII, figs. 3, 3*a*.

1860. *Cardium cardissa* Reeve, Elem. Conch., II, p. 102.

1862. *Hemicardium cardissa* Chenu, Man. Conchyliol., II, p. 111, fig. 518.

1867. *Cardium cardissa* Mitchell, Cat. Mus. Madras, p. 67.

1869. *Hemicardium cardissa* Dunker, Cat. Mus. Godeffroy, IV, p. 112.

1869. *Semicardium cardissa* Frauenfeld, Verhandl. Zool. Bot. Ges. Wien, XIX, p. 884.

1869. *Cardium* (*Corculum*) *cardissa* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 113, pl. VI, figs. 11, 12.

1872. *Hemicardia cardissa* Tryon, Amer. Journ. Conch., VII, p. 270.

1878. *Cardium* (*Corculum*) *cardissa* Kobelt, Illustr. Conchylienbuch, p. 346, pl. CI, fig. 8.

1880. *Cardium* (*Hemicardium*) *cardissa* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 324.

1884. *Hemicardium Cardissa* Grasset, Ind. Test. Viv., p. 276.

1887. *Cardium* (*Hemicardia*) *cardissa* Fischer, P., Man. Conchyliol. p. 1038.

1890. *Hemicardium* (*Hemicardium*) *cardissa* Paetel, Cat. Conch. Samm., III, p. 119.

1892. *Cardium* (*Hemicardia*) *cardissa* Böttger, O., Nachrichtsbl. Deutsch. Malakozool. Ges., XXIV, p. 168.

1896. *Hemicardium cardissa* Casto de Elera, Cat. Sist. Filip., p. 774.

1898. *Hemicardium cardissa* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 48.

1900. *Corculum cardissa* Dall, Proc. U. S. Nat. Mus., XXII, p. 385.
1903. *Hemicardium cardissa* Hidalgo, Obras Malacol., II, p. 359.
1905. *Hemicardium cardissa* Hidalgo, Cat. Filip., p. 346.
1906. *Hemicardium cardissa* Owston, Japan. Loochooan Shells, p. 40.
1911. *Hemicardium cardissa* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 55, 56, 57, pl. XX, fig. 8.
1928. *Cardium* (*Hemicardium*) *cardissa* Faustino, Summary Philippine Mar. Freshw. Moll., p. 63.

I agree with RÖMER (loc. cit., p. 115) that it is possible to separate *Corculum cardissa* from *C. monstrosum* but the differences are not sufficiently marked to consider the two as separate species.

The typical *C. cardissa* is comparatively much more depressed and has a distinctly spiny keel, while in var. *monstrosum* the anterior, prae-umbonal region is much more convex and greatly raised, while the post-umbonal region is distinctly concave; the keels are also markedly curved and almost smooth. I figure shells of the two forms.

Distribution: — *C. cardissa* is very widely distributed in the Indo-Pacific.

In the "Siboga" Expedition there is a single shell of this species collected in Sanana Bay, East coast of Sula Besi (St. 193).

2. *Corculum cardissa* var. *monstrosum* (Gmelin). (Plate VI, figs. 35, 36).

1742. *Cordi-forme naviculiforme* D'Argenville, Hist. Nat., pp. 332, 335, pl. XXVI, fig. D.
1782. *Cardium monstrosum* Chemnitz, Conch.-Cab., VI, p. 155, pl. XIV, figs. 149, 150.
1788. *Cardium monstrosum* Schröter, Conch. Cab. Namen Reg., p. 19.
1789. *Cardium cardissa* var. *D* Bruguière, Encyclopéd. Méthod., I, p. 209.
1790. *Cardium monstrosum* Gmelin, Syst. Nat., (ed. XIII), p. 3253.
1797. Bruguière, Encyclopéd. Méthod., pl. CCXCV, figs. 1*a*, *b*.
1798. *Corculum dolorosum* Röding, Mus. Boltenianum, p. 189.
1817. *Cardium monstrosum* Dillwyn, Descr. Cat., I, p. 112.
1819. *Cardium iuversum* Lamarck, Anim. sans Vertèb., VI, p. 16.
1824. *Cardium inversum* Dubois, Epitome, p. 77.
1825. *Cardium inversum* Sowerby, Cat. Tankerville, p. 17.
1835. *Cardium inversum* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 412.
1841. *Cardium inversum* Sowerby, Conch. Illustr., p. 7.
1843. *Cardium Monstrosum* Hanley, Rec. Biv. Shells, p. 143, pl. XVII, fig. 32.
1844. *Cardium cardissa* Reeve (non Linn., ex parte), Conch. Icon., II, *Cardium*, pl. III, figs. 15*a*, *b*, *c*, *f*.
1845. *Cardium monstrosum* Catlow & Reeve, Conch. Nomencl., p. 43.
1855. *Hemicardium inversum* Berge, Conchylienbuch, p. 65.
1857. *Hemicardia monstrosa* Adams, H. & A., Gen. Rec. Moll., II, p. 458.
1862. *Hemicardium inversum* Chenu, Man. Conchyliol., II, p. 111, fig. 517.
1869. *Cardium* (*Corculum*) *monstrosum* Römer in Martini-Chemn., Conch. Cab. (N. F.), X (2), *Cardiacea*, p. 117, pl. VI, figs. 7, 8.
1872. *Hemicardia monstrosa* Tryon, Amer. Journ. Conch., VII, p. 270.
1890. *Hemicardium* (*Hemicardium*) *monstrosum* Paetel, Cat. Conch. Samm., III, p. 119.
1903. *Hemicardium monstrosum* Hidalgo, Obras Malacol., II, p. 362.
1905. *Hemicardium monstrosum* Hidalgo, Cat. Filip., p. 347.
1911. *Hemicardium monstrosum* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 55.
1928. *Cardium* (*Hemicardium*) *monstrosum* Faustino, Summary Philippine Mar. Freshw. Moll., p. 64.

The main distinguishing characters of this variety from the typical *C. cardissa* have been noted already (*antea* p. 285).

Distribution: — *C. cardissa* var. *monstrosum* has the same range of distribution as the typical *C. cardissa.*

The "Siboga" Expedition collected a single shell of this variety at the Anchorage east of Dangar Besar, Saleh Bay, Sumbawa (St. 313).

3. *Corculum hemicardium* (Linn.).

1741. *Fragum album* Rumph, Amboin. Rarit., p. 142, pl. XLIV, fig. H.
1742. *Concha Cordiformis* etc. Gualtieri, Ind. Test., pl. LXXXIII, figs. C. C.
1758. *Cardium hemicardium* Linnaeus, Syst. Nat., (ed. X), p. 678.
1764. *Cardium hemicardium* Linnaeus, Mus. Lud. Ulr., p. 484.
1767. *Cardium hemicardium* Linnaeus, Syst. Nat., (ed. XII), p. 1121.
1782. *Cardium hemicardium Linnaei* Chemnitz, Conch.-Cab., VI, p. 167, pl. XVI, figs. 159—161.
1788. *Cardium hemicardium* Barbut, Gen. Verm., p. 28, pl. III, fig. 9.
1788. *Cardium hemicardium* Schröter, Conch. Cab. Namen Reg., p. 19.
1789. *Cardium hemicardium* Bruguière, Encyclopéd. Méthod., I, p. 211.
1790. *Cardium Hemicardium* Gmelin, Syst. Nat., (ed. XIII), p. 3246.
1797. Bruguière, Encyclopéd. Méthod., pl. CCXCV, figs. *2b. 2c.*
1797. *Cardium Hemicardium* Humphrey, Mus. Calonnianum, p. 49.
1798. *Fragum hemicardium* Röding, Mus. Boltenianum, p. 189.
1799. *Cardium* (*Hemicardium*) *hemicardium* Spengler, Skrivt. Nat. Selsk., V, p. 53.
1802. *Cardium hemicardium* Bosc, Hist. Nat. Coq., III, p. 99.
1817. *Cardium hemicardium* Dillwyn, Descr. Cat., I, p. 113.
1819. *Cardium hemicardium* Lamarck, Anim. sans Vertèb., VI, p. 16.
1824. *Cardium Hemicardium* Blainville, Dict. Sci. Nat., p. 332, pl. *c*, figs. 4, 4*a*.
1824. *Cardium hemicardium* Dubois, Epitome, p. 77.
1825. *Cardium hemicardium* Sowerby, Cat. Tankerville, p. 17.
1825. *Cardium Hemicardium* Blainville, Man. Malacol., p. 547, pl. LXX, bis, figs. 4, 4*a*.
1835. *Cardium hemicardium* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 411.
1837. *Cardium hemicardium* Cuvier, Anim. Kingdom, pl. XXXV, figs. 5, 5*a*.
1840. *Cardium hemicardium* Pfeiffer, Krit. Reg., p. 59.
1841. *Cardium Hemicardium* Sowerby, Conch. Illustr., p. 7.
1843. *Cardium Hemicardium* Hanley, Rec. Biv. Shells, p. 142.
1844. *Cardium hemicardium* Reeve, Conch. Icon., II, *Cardium*, pl. VII, figs, 38*a*, *b*.
1845. *Cardium hemicardium* Catlow & Reeve, Conch. Nomencl., p. 43.
1852. *Cardium* (*Hemicardium*) *hemicardium* Sowerby, Conch. Man., pp. 167, 318, pl. VI, fig. 123^{**}.
1853. *Cerastes hemicardium* Gray, Ann. Mag. Nat. Hist. (2) XI, p. 40.
1853. *Fragum hemicardium* Mörch, Cat. Yoldi, II, p. 36.
1855. *Cardium hemicardium* Hanley, Ipsa Linn. Conch., p. 46.
1856. *Cardium hemicardium* Hanley in Wood, Ind. Test., p. 35, pl. V, fig. 49.
1857. *Hemicardia* (*Fragum*) *hemicardium* Adams, H. & A., Gen. Rec. Moll., II, p. 458.
1860. *Cardium hemicardium* Reeve, Elem. Conch., II, p. 102.
1862. *Hemicardium* (*Fragum*) *hemicardium* Chenu, Man. Conchyliol., II, pp. 111, 112, fig. 520.
1867. *Cardium hemicardium* Mitchell, Cat. Mus, Madras, p. 67.
1869. *Cardium* (*Hemicardium*) *hemicardium* Issel, Malacol. Mar. Rosso, p. 78.
1869. *Cardium* (*Fragum*) *Hemicardium* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 107, pl. IV, figs. 1—4.
1872. *Hemicardia* (*Fragum*) *Hemicardia* Tryon, Amer. Journ. Conch., VII, p. 271.
1872. *Cardium hemicardium* von Martens, Malacol. Blätt., XIX, p. 63.
1880. *Cardium* (*Hemicardium*) *hemicardium* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 324.
1884. *Hemicardium hemicardium* Tryon, Struct. Syst. Conch., III, p. 195, pl. CXVI, fig. 88.
1884. *Hemicardium hemicardium* Grasset, Ind. Test. Viv., p. 277.

1887. *Cardium* (*Hemicardium-Opisocardium*) *hemicardium* Fischer, P., Man. Conchyliol., p. 1039, pl. XIX, fig. 3.
1890. *Cardium* (*Hemicardium*) *hemicardium* Paetel, Cat. Conch. Samm., III, p. 119.
1896. *Cardium hemicardium* Casto de Elera, Cat. Sist. Filip., p. 774.
1900. *Cardium* (*Fragum-Hemicardium*) *hemicardium* Dall, Proc. U. S. Nat. Mus., XXIII, p. 384.
1903. *Hemicardium hemicardium* Hidalgo, Obras Malacol., II, p. 355.
1904. *Cardium* (*Fragum*) *hemicardium* Smith, Ann. Mag. Nat. Hist., (7) XIV, p. 482.
1905. *Hemicardium hemicardium* Hidalgo, Cat. Filip., p. 347.
1906. *Cardissa hemicardium* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 292.
1906. *Cardium hemicardium* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 465.
1910. *Cardium Hemicardium* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1911. *Cardium* (*Hemicardium*) *hemicardium* Lamy, Bull. Mus. d'Hist. Nat. Paris, XVIII, p. 132.
1911. *Cardium hemicardium* Pelseneer, "Siboga" Lamellibranches (Anat.), pp. 55, 56, 57, pl. XXI, figs. 3, 4.
1928. *Cardium* (*Hemicardium*) *hemicardium* Faustino, Summary Philippine Mar. Freshw. Moll., p. 63.
1930. *Cardium* (*Hemicardium*) *hemicardium* Thiele, Faun. Südwest Austral., V, p. 593.

Some of the "Siboga" shells of this well known species differ from Chinese, Philippine and shells from other localities in the British Museum collection in having some of the ribs more regularly tuberculated; this character, however, does not seem to be of sufficient importance to consider these shells as constituting a distinct race.

Distribution: — *C. hemicardium* is widely distributed in the Indo-Pacific.

The "Siboga" Expedition collected shells of this species at the Anchorage off Djangkar, Java (St. 4), Sailus Ketjil, Paternoster Islands (St. 37), Anchorage off Pulu Sarassa, Postillon Islands (St. 43), Kambaragi Bay, Tanah Djampeah (St. 64) and Macassar (St. 71) and dredged a few valves at St. 260 (5° 36′.5 S., 132° 55′.2 E., 90 metres).

Genus **Lunulicardia** Gray.

1853. *Lunulicardia* Gray, Ann. Mag. Nat. Hist., (2), XI, p. 41.
1857. *Lunulicardia* Adams, H. & A., Gen. Rec. Moll., II, p. 459.
1869. *Lunulicardia* Römer in Martini-Chemn., Conch. Cab. (N. F.), X (2), *Cardiacea*, p. 116.
1887. *Opisocardium* Fischer, P., Man. Conchyliol., p. 1058.
1900. *Opisocardium* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 1077.
1930. *Opisocardium* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N° 3, p. 271.

The genus *Lunulicardia*, as its name suggests, is easily recognized by the deeply impressed lunule which presses the hinge out of shape. The genotype is *Lunulicardia retusa* (Linn.).

1. *Lunulicardia retusa* (Linn.).

1767. *Cardium retusum* Linnaeus, Syst. Nat., (ed. XII), p. 1121.
1780. *Cardium retusum* Born, Test. Mus. Caes. Vindobon., p. 41, pl. III, figs. 1, 2.
1782. *Cardium retusum Linnaei* Chemnitz, Conch.-Cab., VI, p. 147, pl. XIV, figs. 139—142.
1788. *Cardium retusum* Schröter, Conch.-Cab. Namen Reg., p. 19.
1789. *Cardium retusum* Bruguière (ex parte), Encyclopéd. Méthod., I, p. 210.
1790. *Cardium retusum* Gmelin, Syst. Nat., (ed. XIII), p. 3245.
1797. *Cardium excavatum* Humphrey, Mus. Calonnianum, p. 49.
1797. Bruguière, Encyclopéd. Méthod., pl. CCXCIV, fig. 3*b*.
1799. *Cardium* (*Hemicardium*) *retusum* Spengler, Skrivt. Nat. Selsk., V, p. 54.
1817. *Cardium retusum* Dillwyn, Descr. Cat., I, p. 112.
1819. *Cardium retusum* Lamarck, Anim. sans Vertèb., VI, p. 15.
1824. *Cardium retusum* Dubois, Epitome, p. 77.

1835. *Cardium retusum* Deshayes in Lamarck, Anim. sans Vertèb., VII. p. 410.
1840. *Cardium retusum* Pfeiffer, Krit. Reg., p. 59.
1840. *Cardium subretusum* Sowerby, Proc. Zool. Soc. London, p. 110.
1841. *Cardium subretusum* Reeve, Conch. Syst., I, p. 100, pl. LXXVII, figs. 24, 24.
1841. *Cardium retusum* Sowerby, Conch. Illustr., p. 7.
1843. *Cardium Retusum* and *C. Subretusum* Hanley, Rec. Biv. Shells, pp. 142, 144, pl. XVII, fig. 29.
1844. *Cardium retusum* Potiez & Michaud, Gal. Douai, II, p. 178.
1845. *Cardium retusum* Catlow & Reeve, Conch. Nomencl., p. 44.
1845. *Cardium subretusum* and *C. retusum* Reeve, Conch. Icon., II, *Cardium*, pl. XIX, figs. 100, 103.
1850. *Cardium Retusum* Deshayes in Cuvier, Règne Anim., pl. XCIX, figs. 2, 2*a*—*c*.
1853. *Lunulicardia retusa* Gray, Ann. Mag. Nat. Hist., (2), XI, p. 41.
1855. *Cardium retusum* Hanley, Ipsa Linn. Conch., p. 46.
1855. *Hemicardium retusum* Berge, Conchylienbuch, p. 65.
1857. *Hemicardia* (*Lunulicardia*) *retusa* Adams, H. & A., Gen. Rec. Moll., II, p. 459.
1860. *Cardium retusum* and *C. subretusum* Reeve, Elem. Conch., II, p. 103.
1862. *Hemicardium* (*Lunulicardia*) *retusum* Chenu, Man. Conchyliol., II, p. 112, figs. 524, 525.
1869. *Cardium subretusum* von Martens, von der Deckens Reise, p. 66.
1869. *Cardium* (*Lunulicardia*) *retusum* Römer in Martini-Chemn., Conch.-Cab. (N. F.), X (2), *Cardiacea* p. 112, pl. VI, figs. 1—4.
1870. *Hemicardia* (*Lunulicardia*) *subretusa* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 447.
1872. *Hemicardia* (*Lunulicardia*) *retusa* Tryon, Amer. Journ. Conch., VII, p. 272.
1874. *Cardium retusum* von Martens, Vorderasiat. Conch., p. 104.
1878. *Cardium* (*Lunulicardia*) *retusum* Kobelt, Illustr. Conchylienbuch, p. 346, pl. CI, fig. 5.
1879. *Cardium retusum* von Martens, Monatsber. Akad. Wiss. Berlin, p. 743.
1880. *Cardium* (*Hemicardium*) *retusum* and *C.* (*H.*) *subretusum*, von Martens, Möbius Beiträg. Meeresf. Mauritius, Seychell., p. 324.
1884. *Hemicardium retusum* and *H. subretusum* Grasset, Ind. Test. Viv., p. 277.
1884. *Hemicardium* (*Lunulicardia*) *retusa* Tryon, Struct. Syst. Conch., III, p. 195, pl. CXVI, fig. 92.
1887. *Cardium subretusum* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 210.
1890. *Hemicardium* (*Lunulicardia*) *retusum* and var. *subretusum*, Paetel, Cat. Conch. Samm., III, p. 119.
1890. *Cardium retusum* Vassel, Bull. Soc. Nat. Hist. d'Autun, III, p. 26.
1895. *Cardium retusum* Pilsbry, Cat. Mar. Moll. Japan, p. 131.
1898. *Cardium* (*Lunulicardia*) *subretusum* Melvill & Standen, Journ. Conch., IX, p. 82.
1899. *Hemicardium subretusum* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 192.
1900. *Lunulicardia retusa* Dall, Proc. U. S. Nat. Mus., XXIII, p. 385.
1901. *Hemicardium retusum* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 283.
1903. *Hemicardium subretusum* Hidalgo, Obras Malacol., II, p. 356.
1905. *Hemicardium subretusum* Hidalgo, Cat. Filip., p. 347.
1906. *Cardissa* (*Lunulicardia*) *subretusa* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 292.
1906. *Cardium retusum* Owston, Japan. Loochooan Shells, p. 39.
1909. *Hemicardium* (*Lunulicardia*) *subretusum*, Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 135.
1909. *Hemicardium* (*Lunulicardia*) *retusum* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 260.
1910. *Opisocardium subretusum* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1911. *Hemicardium retusum* Pelseneer, "Siboga" Lamellibranches (Anat.), pp, 55, 56, 57, pl. XXI, fig. 5.
1928. *Cardium* (*Hemicardium*) *subretusum* Faustino, Summary Philippine Mar. Freshw. Moll., p. 64.
1929. *Cardium* (*Hemicardium*) *retusum* Dautzenberg, Faun. Colon. Français., III, p. 590.

The nodulation of the middle ribs, which is the main distinguishing character between *L. retusa* and *L. subretusa*, is not at all constant; the nodules may be well developed, reduced or altogether absent. I, therefore, agree with LYNGE that the two species should be united.

Distribution: — *Lunulicardia retusa* has been recorded from the Gulf of Suez, various localities in the Indian Ocean, the Gulf of Siam, round Philippines and the Torres Straits.

In the "Siboga" collection the species is represented by a number of young shells collected at the Anchorage off Pulu Kawassang, Paternoster Islands (St. 40) and the Anchorage off North Ubian (St. 99).

Family Tancrediidae.

Genus **Hemidonax** Mörch.

1870. *Hemidonax* Mörch, Malakozool. Blätt., XVII, p. 121.
1887. *Hemidonax* Fischer, P., Man. Conchyliol., p. 1101.
1900. *Hemidonax* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 963.

The exact position of the genus *Himidonax*-type *Hemidonax donaciformis* (Bruguière), is a matter for discussion. Species of the genus were described and included in the genus *Cardium* Linn., but as Pelseneer[1]) pointed out the structure of the foot of *Hemidonax donaciformis* is entirely different from that of the genus *Cardium*, and this alone would justify its separation as a distinct family. Fischer included it in the family Tancrediidae which he placed between the families Unicardiidae and Donacidae; Dall has included it in the Donacidae. The genus in form, structure and ornamentation of the shells resembles *Donax*, but the pallial line is entire or unsinuated, and there are two lateral teeth on each side in the right valve.

1. *Hemidonax donaciformis* (Bruguière).

1782. *Cardium medium* Chemnitz (ex parte, non Linnaeus), Conch.-Cab., VI, p. 171, pl. XVI, fig. 165.
1788. *Cardium medium* Schröter (ex parte, non Linnaeus), Conch.-Cab. Namen Reg., p. 19.
1789. *Cardium donaciforme*, Bruguière, Encyclopéd. Méthod., I, p. 214.
1790. *Cardium medium* var. B., Gmelin (non Linnaeus) Syst. Nat., (ed. XIII), p. 3247.
1797. Bruguière, Encyclopéd. Méthod., pl. CCXCVI, fig. 2.
1799. *Cardium donaceum*, Spengler, Skr. Nat. Hist. Selsk., V, p. 37.
1802. *Cardium donaciforme* Bosc, Hist. Nat. Coq., III. p. 99.
1817. *Cardium donaciforme* Dillwyn, Descr. Cat., I, p. 114.
1818. *Cardium cardioides* Lamarck, Anim. sans Vertèb., V, p. 550.
1824. *Cardium cardioides* Dubois, Epitome, p. 62.
1825. *Cardium Donaciforme* Wood, Ind. Test., p. 27, pl. V, fig. 38.
1834. *Cardium Cardioides*, Quoy & Gaimard, Voy. "Astrolabe", III, p. 495, pl. LXXXI, figs. 17—19.
1841. *Cardium donaciforme* Sowerby, Conch. Illustr., Cat., p. 6, figs. 26, 27.
1843. *Cardium Donaciforme* Hanley, Rev. Biv. Shells, p. 144.
1844. *Cardium Australiense* and *D. donaciforme*, Reeve, Conch. Icon., II, *Cardium*, pl. V figs. 24, 25.
1845. *Cardium Australiense* Reeve, Proc. Zool. Soc. London (vol. for 1844), p. 168.
1845. *Cardium Donaciforme* Catlow & Reeve, Conch. Nomencl., p. 42.
1853. *Fragum* (*Hemicardium*) *donaciforme* Mörch, Cat. Yoldi, p. 35.
1856. *Cardium Donaciforme* Hanley, in Wood Ind. Test., p. 35, pl. V, fig. 38.

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1) Pelseneer, P. — "Siboga" Lamellibranches (Anat.), p. 38 (1911).

1857. *Hemicardia* (*Fragum*) *donaciforme* Adams, H. & A., Gen. Rec. Moll., II, p. 458.
1862. *Adacna* (*Didacna*) *donaciforme* Chenu, Man. Conchyliol., II, p. 112, fig. 529.
1867. *Cardium Australiense* Angas, Proc. Zool. Soc. London, p. 925.
1869. *Cardium* (*Fragum*) *donaciforme* Römer, in Martini-Chemn. Conch.-Cab. (N. F.), X (2), *Cardiacea*, p. 109, pl. IV. fig. 13, pl. XIV, figs. 16, 17 (also var. *australiense* Reeve).
1880. *Hemicardium donaciformis* Brazier, Proc. Linn. Soc. N. S. Wales, V. p. 7.
1884. *Adacna donaciformis*, Grasset, Ind. Test. Viv., p. 276.
1877. *Adacna* (*Didacna*) *donaciformis* Tryon, Struct. Syst. Conch., III, p. 195, pl. CXVI, fig. 86.
1888. *Hemidonax donaciformis* Fischer, P., Man. Conchyliol., p. 1101.
1896. *Hemicardium* (*Fragum*) *donaciformis* Casto de Elera, Cat. Sist. Filip., p. 774.
1900. *Hemidonax donaciformis* Dall, Proc. U. S. Nat. Mus., XXIII, p. 385.
1903. *Hemidonax donaciforme* Hidalgo, Obras Malacol., II, p. 357.
1905. *Hemidonax Donaciforme* Hidalgo, Cat. Filip., p. 346.
1911. *Hemidonax donaciformis* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 38, pl. XIII, fig. 4.
1928. *Cardium* (*Hemicardium*) *donaciforme* Faustino, Summary Philippine Mar. Freshw. Moll., p. 63.

REEVE's species *Cardium australiense* is, as I have satisfied myself by examination of REEVE's types, a synonym of *H. donaciforme*.

The thick shell of this species is ornamented with regular radial ridges and a few concentric threads, and the general form in all the shells that I have examined, is remarkably constant.

Distribution: — *H. donaciforme* is known from round the Philippines and the Australian seas.

In the "Siboga" collection the species is represented by 2 shells collected in the Bay of Labuan Tring, west coast of Lombok (St. 19) and Anchorage off Beo, Karakelang Islands (St. 131) respectively.

Family TRIDACNIDAE.

Genus **Tridacna** Lamarck.

1799. *Tridacna*, Lamarck, Mem. Soc. Hist. Nat. Paris, p. 86.
1857. *Chametrachaea* Adams, H. & A., Gen. Rec. Moll., II, p. 464.
1862. *Tridacna* Reeve, Conch. Icon., XIV, *Tridacna* pl. I (explanation).
1868. *Tridacna* Küster in Martini-Chemn. Conch.-Cab. (N. F.), VIII (4), *Tridacna* etc., p. 3.
1887. *Tridacna* Fischer, P. Man. Conchyliol., p. 1034.
1927. *Tridacna* Cox, Rept. Palaeontol. Zanzibar, p. 99.

Most authors have accepted Brugière as the author of the genus *Tridacna*, but his publication of the mere name on pl. CCXXXV of "Encyclopéd. Méthod." in 1797[1]) without any description or citation of type cannot be accepted as establishing the genus. The next author to use the name was LAMARCK in 1799, and I have, therefore, accepted *Tridacna* as a genus of this author.

CHLIDREN[2]) selected *Tridacna gigas* (Linn.) as the genotype.

1. *Tridacna squamosa* Lamarck.

1741. *Chama squamosa* etc., Rumph, Amboin. Rarit., p. 109, pl. XLII, fig. A.
1742. *Concha imbricata* etc., Gualtieri, Ind. Test., pl. XCII, figs. F, G, pl. XCIII, fig. B.

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1) The earlier usage of this name by BRUGIÈRE was, as is pointed out by SHERBORN — Ind. Animalium, p. 990 (1902) of the vernacular name and not the Latin name *Tridacna*.

2) CHILDREN, J. G. — Quart. Journ. Sci. Lit. Arts., XV, p. 31 (1823).

1784. *Chama Gigas Linnaei* etc., Chemnitz, Conch.-Cab., VII, p. 11, pl. XLIX, figs. 492, 493.
1795. *Chama imbricata seu Gigantea* etc., Chemnitz, Conch.-Cab., XI, p. 239, pl. CCIV, figs. 1997, 1998.
1797. Bruguière, Encycloped. Méthod., pl. CCXXXVI, figs. 1*a*, *b*.
1817. *Chama Gigas* var. *A*. Dillwyn, Descr. Cat., I, p. 213.
1819. *Tridacna squamosa* Lamarck, Anim. sans Vertèb., VI, p. 106.
1825. *Tridacna squamosa* Dubois, Epitome, p. 100.
1831. *Tridacna squamosa* Deshayes, Encycloped. Méthod., II, p. 1046.
1834. *Tridacna squamosa* Quoy & Gaimard, Voy. "Astrolabe" III, p. 487, pl. LXXIX, fig. 1.
1836. *Tridacna squamosa* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 10.
1843. *Tridacna Squamosa* Hanley, Rec. Biv. Shells, p. 232.
1845. *Tridacna squamosa* Chenu, Illustr. Conchyliol.. p. 1, pl. III.
1849. *Tridacna squamosa* Cuvier, Règne Anim., Moll., pl. XCVI, fig. 1.
1857. *Chametrachaea sqamosa* Adams, H. & A., Gen. Rec. Moll.. II, p. 465.
1860. *Tridacna squamosa* Reeve, Elem. Conch., II, p. 75.
1862. *Tridacna squamosa* Reeve, Conch. Icon., XIV, *Tridacna* pls. III, IV, figs. 3, 3*b*, *c*, *d*.
1868. *Tridacna squamosa* Küster in Martini-Chemn. Conch.-Cab. (N. F.), VIII (4), *Tridacna* etc., p. 5, pl. I, figs. 1—3, pl. II, figs. 1, 2.
1869. *Tridacna squamosa* Lischke, Japan. Meeresconch., I, p. 160.
1882. *Tridacna squamosa* Dunker, Ind. Mar. Moll. Japon., p. 215.
1884. *Tridacna squamosa* Grasset, Ind. Test. Viv., p. 278.
1887. *Tridacna squamosa* Sowerby, Thes. Conch., V, p. 180, pl. CCCCLXXXV—CCCCLXXXIX, figs 2, 7, 15, 17.
1889. *Tridacna squamosa* Morlet, Journ. Conchyliol., XXXVII, p. 168.
1891. *Tridacna squamosa* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 228.
1899. *Tridacna gigas* var. *squamosa* Hedley, Mem. Austral. Mus., III, p. 504.
1899. *Tridacna squamosa* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 190.
1903. *Tridacna squamosa* Hidalgo, Obras Malacol., II, p. 386.
1906. *Tridacna squamosa* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 291.
1909. *Tridacna squamosa* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7), V, p. 262.
1911. *Tridacna squamosa* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 58.
1914. *Tridacna squamosa* Hirase, Illustr. Thousand Shells, pt. 1, fig. 36.
1917. *Tridacna squamosa* Odhner, Kungl. Sv. Akad. Handl., LII, N⁰ 16, p. 8.
1921. *Tridacna squamosa* Hedley, Mem. Austral. Mus., XIII, p. 172, pl. XXVIII, fig. 3.
1928. *Tridacna squamosa* Faustino, Summary Philippine Mar. Freshw. Moll., p. 65.

HEDLEY originally considered *T. squamosa* to be a variety of *T. gigas*, and COOKE and SMITH were of the same opinion. Recently DAUTZENBERG [1]) has included it in the synonymy of *T. gigas*, but I agree with HEDLEY's later conclusion that it is a distinct species. As noted by HEDLEY, *T. squamosa* has a more equilateral shell than the other of the genus, and the comb of the pedal orifice also has stronger teeth.

Distribution: — *T. squamosa* has a wide distribution in the Indo-Pacific, and probably also in the Red Sea. As suggested by HEDLEY the range of *T. squamosa* appears to be "almost coextensive with that of the reef-building corals".

The "Siboga" expedition collected mostly young shells of this species at Haingsisi, Samau Island, Timor (St. 60), reef near Anchorage of Beo, Karakelang Islands (St. 131), reef at Elat, West coast of Great Kei Island (St. 261) and reef in Pepela Bay, East coast of Rotti Island (St. 301).

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1) DAUTZENBERG, P. — Faun. Colon. Français., III, p. 587 (1929).

2. *Tridacna crocea* Lamarck.

1685. *Pectunculus striatus* etc. Lister, Hist. Conch., pl. CCCLIII, fig. 190.
1784. *Chama imbricata* etc. Chemnitz, Conch.-Cab., VII, p. 124, pl. XLIX. fig. 496.
1797. Bruguière, Encycloped. Méthod., pl. CCXXXV, fig. 2.
1817. *Chama gigas* var. C., Dillwyn. Descr. Cat., I, p. 214.
1819. *Tridacna crocea* Lamarck, Anim. sans Vertèb., VI, p. 106.
1825. *Tridacna crocea* Dubois, Epitome, p. 100.
1831. *Tridacna crocea* Deshayes, Encyclopéd. Méthod., III, p. 1046.
1834. *Tridacna crocea* and *T. mutica* (non Lam.), Quoy & Gaimard, Voy „Astrolabe”, III, p. 488, pl. LXXIX, figs. 2, 3, p. 490, pl. LXXX, figs. 1—3.
1843. *Tridacna Crocea* Hanley, Rec. Biv. Shells, p. 232.
1845. *Tridacna crocea* Chenu, Illustr. Conchyliol., p. 2. pl IV, fig. 2.
1855. *Tridacna crocea* Woodward, Ann. Mag. Nat. Hist., (2) XV, p. 100.
1857. *Chametrachaea scapha*, Adams, H. & A. Gen. Rec. Moll.. II, p. 465. pl. CXIII, figs. 2.
1860. *Tridacna crocea* Reeve, Elem. Conch., II, p. 75.
1862. *Tridacna Cumingii*, *T. ferruginea* and *T. crocea* Reeve, Conch. Icon., XIV, *Tridacna*, pl. VII, fig. 7, pl. VIII, figs. 8, 9.
1868. *Tridacna crocea* Küster in Martini-Chemn. Conch.-Cab. (N. F.), VIII (4), *Tridacna* etc., p. 6, pl. I, fig. 6.
1869. *Chametrachaea crocea* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 884.
1878. *Tridacna crocea* Tapparone-Canefri. Bull. Soc. Zool. France. III, p. 276.
1880. *Tridacna crocea* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 323.
1884. *Tridacna crocea* Grasset, Ind Test. Viv., p. 228.
1884. *Tridacna crocea* Sowerby, Thes. Conch., V, p. 181, pl. CCCCLXXXVI, fig. 6, pl. CCCCLXXXVII, figs. 9, 10.
1885. *Tridacna crocea* Smith, "Challenger" Lamellibranchia., p. 170.
1887. *Tridacna crocea* var. *Cumingii* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 209.
1902. *Tridacna crocea* von Martens, Rumphius Gendkb., p. 125.
1903. *Tridacna cumingii* Smith. Faun. Geogr. Maldive, Laccadive Archipel., II., p. 624.
1903. *Tridacna Cumingii* and *T. crocea*, Hidalgo, Obras Malacol., II, pp. 392, 397.
1906. *Tridacna crocea* Melvill & Standen, Proc. Zool. Soc. London, p. 840.
1909. *Tridacna crocea* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat. Math., (7) V, p. 263.
1910. *Tridacna crocea* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1915. *Tridacna crocea* Hirase, Illustr. Thousand Shells, pt. 3, pl. XXIX, fig. 143.
1916. *Tridacna crocea* Boettger, Abhandl. Senckenberg. Nat. Ges., XXXVI, p. 308.
1921. *Tridacna crocea* Hedley, Mem. Austral. Mus., XIII, p. 166, pl. XXX, fig. 5.
1925. *Tridacna crocea* Oostingh, Geol. Comm. Agr. Univ. Wageningen, Nº 9, p. 279.
1928. *Tridacna crocea* and *T. Cumingii* Faustino, Summary Philippine Mar. Freshw. Moll., p. 64.
1929. *Tridacna crocea* Dautzenberg, Faun. Colon, Français., III, p. 585.

After a careful examination of Reeve's types in the British Museum (Nat. Hist.), London and the good series of shells of different ages in the "Siboga" collection, I agree with Hedley that *T. cumingii* and *T. ferruginea* are synonymous with *T. crocea*. The species is very variable in regard to shape, the tumidity of the valves, and sculpture. The scales on the ridges may be raised or flush with the surface.

Distribution: — *T. crocea* is very widely distributed in the Indo-Pacific region on coral reefs and has also been recorded from the Persian Gulf.

The "Siboga" Expedition collected specimens of this species in the Bay of Nangamessi, Sumba (St. 53), reef near Anchorage off Beo, Karakelang Islands (St. 131), reef near Fau Anchorage (St. 149) and reef near Saleyer Anchorage (St. 213). A dead valve was also brought up from hard sandy bottom at St. 32 (9° 2′ S., 115° 47′ E., 842 metres).

3. *Tridacna elongata* Lamarck.

1819. *Tridacna elongata* var. *a* Lamarck, Anim. sans Vertèb., VI, p. 106.
1831. *Tridacna elongata* Deshayes, Encyclopéd. Méthod., III, p. 1045.
1836. *Tridacna elongata* var. *a* Deshayes in Lamarck, Anim. sans Vertèb., VII, p. 9.
1843. *Tridacna elongata* Menke, Moll. Nov. Holland., p. 39.
1845. *Tridacna elongata* Chenu, Illustr. Conchyliol., p. 1, pl. I, fig. 2, pl. II, figs. 1—3.
1869. *Tridacna elongata* Issel, Malacol. Mar. Rosso, p. 79.
1884. *Tridacna lanceolata* Sowerby, Thes. Conch., V, p. 181, pl. CCCCLXXXIX, fig. 19.
1889. *Tridacna elongata* Brazier, Mem. Austral. Mus., II, p. 28.
1895. *Tridacna elongata* Pilsbry, Cat. Mar. Moll. Japan, p. 182.
1903. *Tridacna Reevei* Hidalgo, Mem. Real Acad. Cienc. Madrid, XXI, p. 389.
1906. *Tridacna elongata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XII, p. 215.
1914. *Tridacna elongata* Iredale, Proc. Zool. Soc. London, p. 666.
1914. *Tridacna elongata* Hedley, Proc. Geogr. Soc. S. Australia, VIII, p. 267.
1921. *Tridacna elongata* Hedley, Mem. Austral. Mus., XIII, p. 167, pl. XXX, fig. 8.
1928. *Tridacna Reevei* Faustino, Summary Philippine Mar. Freshw. Moll., p. 65.
1930. *Tridacna elongata* Thiele, Faun. Südwest Austral., V, p. 592.

As HEDLEY has shown LAMARCK confused with *T. elongata* at least three other species, *T. maxima* Röding, *T. imbricata* Röding and *T. elongatissima* Bianconi. The synonymy given above is based on HEDLEY's work and I regard with HEDLEY the figures 1, 1*a*, 1*b* on CHENU's plate II (loc. cit.) as those of the typical form. *T. elongata* as figured by Reeve in "Conch Icon". is *T. maxima* Röding.

The shell is inequilateral, oblong and produced posteriorly; the ventral margin is very crenulate, and the seven convex ribs are covered with large foliaceous scales. In old shells the ventral margins of the two valves in the central part do not meet in the middle, and a distinct opening is left between the valves, even when fully closed.

Distribution: — *T. elongata* has a wide range in the Indo-Pacific, and has also been recorded from the Red Sea.

In the "Siboga" collection the species is represented by shells from Lumu Lumu Shoal, Borneo Bank (St. 78), reef near Anchorage off Beo, Karakelang Islands (St. 131), reef near Anchorage off Lirung, Salibabu Islands (St. 133), reef near Anchorage south of Lucipara Group (St. 225) and reef in Nalahia Bay, Nusa Laut Island (St. 234).

Genus **Hippopus** Lamarck.

1799. *Hippopus* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 86.
1857. *Hippopus* Adams, H. A., Gen. Rec. Moll., II, p. 465.
1862. *Hippopus* Reeve, Conch. Icon., XIV, *Hippopus*, pl. I (explanation).
1868. *Hippopus* Küster in Martini-Chemn., Conch.-Cab. (N. F.), VIII (4) *Tridacna* etc., p. 7.
1887. *Hippopus* Fischer, P., Man. Conchyliol., p. 1035.

Good descriptions of the genus are published in the works cited above. The genotype is *Hippopus hippopus* (Linn.) — the only known species of the genus.

1. *Hippopus hippopus* (Linn.).

1685. *Pectunculus major variegatus* Lister, Hist. Conch., pl. CCCXLIX. fig. 187; pl. CCCL, fig. 188.
1741. *Chama striata*, Rumph, Amboin. Rarit., p. 131, pl. XLII, fig. c.

1742. *Concha imbricata striata* Gualtieri, Ind. Test., pl. XCIII, figs. A. A.
1748. *Chama aspera* Regenfuss, Rec. Coq. etc., p. XLV, pl. X, fig. 49.
1758. *Chama Hippopus* Linnaeus, Syst. Nat. (ed. X) p. 691.
1764. *Pied du Cheval* Knorr, Délices Yeux, I, p. 39, pl. XXII, figs. 1, 2.
1767. *Chama striata* Petivier, Anim. Amboin., p. 4, pl. XVIII, fig. 15.
1767. *Chama Hippopus* Linnaeus, Syst. Nat. (ed. XII), p. 1137.
1773. *Concha indica* Bonanni, Test. Mus. Kircher, II, p. 46, pl. XIII, figs. 80, 81.
1780. *Chama hippopus* Born, Test. Mus. Caes. Vindobon., p. 81.
1780. *Coeur* Favanne, La Conch. pl. LI, fig. F.
1784. *Chama hippopus* Chemnitz, Conch. Cab., VII, p. 127, pl. I, figs. 498, 499.
1788. *Chama hippopus* and *C. asinus* Barbut, Gen. Verm., pp. 46, 47. pl. VI, figs. 3, 5.
1790. *Chama Hippopus* Gmelin, Syst. Nat., (ed. XIII), p. 3300.
1797. *Tridachna Ursina* Humphrey, Mus. Calonnianum, p. 50.
1798. *Tridachnes hippopus* and *T. ungula* Röding, Mus. Boltenianum, p. 172.
1799. *Hippopus hippopus* Lamarck, Syst. Anim. sans Vertèb., p. 117
1801. *Hippopus maculatus* Lamarck, Syst. Anim. sans Vertèb., p. 117.
1802. *Hippopus brassica* Bosc. Hist. Nat Coq., III, p. 91. pl. XXI, fig. 6.
1805. *Hippopus maculatus* deRoissy in Buffon Hist. Nat. Moll., VI, p. 391, pl. CCCLXXXIV, fig. 5.
1817. *Chama hippopus* Dillwyn, Descr., Cat., I, p. 215.
1817. *Hippopus brassica* Schumacher, Ess. Nouv. Syst., p. 140, pl, XII, figs. 29*b*.
1819. *Hippopus maculatus* Lamarck, Anim. sans Vertèb., VI, p. 108.
1821. *Hippopus maculatus* Blainville,, Dict. Sci. Nat., XXI, p. 189, pl. XCVI, figs. 2, 2*a*.
1824. *Tridacna hippopus* Blainville, Dict. Sci. Nat., XXXII, p. 329.
1824. *Hippopus maculatus* Dubois, Epitome, p. 101.
1825. *Chama Hippopus* Wood, Ind. Test., p. 42, pl. IX, fig. 3.
1825. *Tridacna Hippopus* Blainville, Man. Malacol., p. 544, pl. LXVIII, fig. 2.
1825. *Hippopus maculatus* Sowerby, Cat. Tankerville, p. 22.
1830. *Hippopus maculatus* Sowerby, Gen. Shells, II, figs 1, 1.
1831. *Hippopus maculatus* Deshayes, Encycloped. Méthod., II, p. 278.
1834. *Tridacna maculata* Quoy & Gaimard, Voy. „Astrolabe", III, p. 491, pl. LXXX, figs. 4—6.
1836. *Hippopus maculatus* Deshayes, in Lamarck Anim. sans Vertèb., VII, p. 12.
1837. *Hippopus maculatus* Cuvier, Anim. Kingdom. pl. XXXII, figs. 7, 7*a*.
1839. *Tridacna* (*Hippopus*) *maculatus* Anton, Verzeichniss, p. 12.
1840. *Hippopus maculatus* Swainson, Treat. Malacol., p. 374.
1841. *Hippopus maculatus* Reeve, Conch, Syst., I, p. 134, pl. XCVIII, figs. 1, 1*a*.
1842. *Hippopus Maculatus* Sowerby, Conch. Man., (ed. II), pp. 163, 298.
1843. *Hippopus maculatus* Menke, Moll. Nov. Holland., p. 39.
1843. *Hippopus Maculatus* Hanley, Rec. Biv. Shells, p. 232.
1844. *Hippopus maculatus* Potiez & Michaud, Gal. Douai, II, p. 172.
1845. *Tridacna* (*Hippopus*) *maculata* Chenu, Illustr. Conchyliol., pl. V, figs. 1—8.
1847. *Tridacna hippopus* Gray, Proc. Zool. Soc. London, p. 198.
1850. *Hippopus maculatus*, Deshayes, Trait. Elem. Conch., pl. XXVI, figs. 8, 9.
1853. *Hippopus maculatus* Philippi, Handb. Conch. Malacol., p. 368.
1853. *Hippopus equinus* Mörch, Cat. Yoldi, II, p. 56.
1855. *Hippopus maculatus* Berge, Conchylienbuch, p. 81.
1855. *Chama hippopus* Hanley, Ipsa Linn. Conch., p. 85.
1856. *Chama hippopus* Hanley in Wood, Ind. Test., p. 52, pl. IX, fig. 3.
1857. *Hippopus maculatus* Gray, M. E., Fig. Moll. Anim., V, p. 5. pl. CCCXXXV, fig. 1, 1*a*.
1857. *Hippopus equinus* Adams; H. & A., Gen. Rec. Moll., II, p. 466, pl. CXIII, figs. 3. 3*a*, *b*.
1858. *Hippopus maculatus* Fischer, P., Journ. Conchyliol., VII, p. 339.
1862. *Hippopus maculatus* Reeve, Conch. Icon., XIV, *Hippopus*, pl. I, fig. 1.
1862. *Hippopus maculatus* Chenu, Man. Conchyliol., II, p. 118, figs. 564, 565.
1867. *Hippopus maculatus* Mitchell, Cat. Mus. Madras, p. 68.
1868. *Hippopus maculatus* Küster in Martini-Chemn., Conch.-Cab. (N. F.), VIII (4) *Tridacna* etc., p. 8, pl. III, figs. 1—3.

1869. *Hippopus equinus* Dunker, Cat. Mus. Godeffroy, IV, p. 113.
1869. *Hippopus equinus* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien XIX, p. 884.
1874. *Hippopus equinus* Dunker, Cat. Mus. Godeffroy, V, p. 172.
1878. *Hippopus maculatus* Kobelt, Illustr. Conchylienbuch, p. 349, pl. CII, fig. 3.
1880. *Hippopus maculatus* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 323.
1880. *Hippopus maculatus* Tennison-Woods, Proc. Linn. Soc. N. S. Wales, V, pp. 124, 125.
1884. *Hippopus maculatus* Tryon, Struct. Syst. Conch., III, p. 209, pl. CXXVIII, figs. 89, 90.
1884. *Hippopus Maculatus* Sowerby, Thes. Conch., V, pl. CCCCLXXXIX.
1884. *Hippopus maculata* Grasset, Ind. Test. Viv., p. 278.
1887. *Hippopus maculatus* Fischer, P., Man. Conchyliol., p. 1035.
1890. *Hippopus maculatus* Paetel, Cat. Conch. Samm., III, p. 124.
1895. *Hippopus maculatus* Pilsbry, Cat. Mar. Moll. Japan, p. 130.
1896. *Hippopus maculatus* Casto de Elera, Cat. Sist. Filip., p. 777.
1899. *Hippopus hippopus* Smith, Proc. Malacol. Soc. London, III, p. 111.
1903. *Hippopus maculatus* Hidalgo, Obras Malacol., II, p. 400.
1905. *Hippopus maculatus* Hidalgo, Cat. Filip., p. 352.
1906. *Hippopus maculatus* Owston, Japan. Loochooan Shells, p. 40.
1907. *Hippopus maculatus* Hirase, Cat. Mar. Shells Japan, p. 21.
1910. *Hippopus hippopus* Hedley, Austral. Ass. Adv. Sci., XII, p. 348.
1913. *Hippopus maculatus* Woodward, B. B., Life of Mollusca, pl. XIX, fig. 5.
1916. *Hippopus maculatus* Boettger, Abhandl. Senckenberg., Nat. Ges., XXXVI, 308.
1916. *Hippopus hippopus* Hedley, Journ. Proc. Roy. Soc. West Australia, I, p. 163.
1925. *Hippopus hippopus* Oostingh, Geol. Comm. Agr. Univ. Wageningen, N⁰ 9, p. 280.
1928. *Hippopus maculatus* Faustino, Summary Philippine Mar. Freshw. Moll., p. 65.
1929. *Hippopus hippopus* Dautzenberg, Faun. Colon. Français., III, p. 586.

In the "Siboga" collection this interesting bivalve is represented by shells varying in length from 70—160 mm. These shells illustrate very well the great variability in shape, the form of the lunule, the tumidity and sculpture of the shell of this species.

Distribution: — *H. hippopus* is widely distributed in the Indo-Pacific.

The "Siboga" shells were collected in Kambaragi Bay, Tanah Djampeah (St. 64), Lumu Lumu Shoal, Borneo Bank (St. 78), Anchorage off Laiwui, coast of Obi major (St. 142), Anchorage south of Lucipara Group (St. 225) and west side of Taam Island (St. 252).

Family Chamidae.

Genus **Chama** Linnaeus.

1758. *Chama* Linnaeus, Syst. Nat., (ed. X), p. 691.
1823. *Chama* Children, Quart. Journ. Sci. Lit. Arts, XV, p. 28.
1846. *Chama* Reeve, Conch. Icon., IV, *Chama*, pl. I (explanation).
1857. *Chama* Adams, H. & A., Gen. Rec. Moll., II, p. 462.
1880. *Chama* Clessin in Martini-Chemn., Conch.-Cab. (N. F.), VIII, (5), *Chamiden* p. 1.
1887. *Chama* Fischer, Man. Conchyliol., p. 1048.
1919. *Chama* Odhner Kungl. Sv. Akad. Handl., LIX, N⁰ 3, p. 76.
1927. *Chama* Cox, Rept. Palaeontol. Zanzibar, p. 98.
1928. *Chama* Lamy, Journ. Conchyliol., LXXI, p. 293.

The family has recently been discussed in detail by Odhner and Lamy. The subgenera represented in the "Siboga" collection are: — *Chama s.s.*, — type *Chama lazarus* Linn., and *Pseudochama* Odhner — type *Chama* (*Pseudochama*) *cristella* (Lam.).

1. *Chama* (*Chama*) *lobata* Broderip.

1834. *Chama lobata* Broderip, Proc. Zool. Soc. London, p. 149.
1834. *Chama lobata* Broderip, Trans. Zool. Soc. London, p. 303, pl. CCCVIII, figs. 4, 5.
1843. *Chama Lobata* Hanley, Rec. Biv. Shells, p. 228.
1845. *Chama lobata* Catlow & Reeve, Conch. Nomencl., p: 70.
1846. *Chama lobata* Chenu, Illustr. Conchyliol., pl. VI, figs. 1, 1a, pl. VII, figs. 1a—1c.
1847. *Chama lobata* Reeve, Conch. Icon., IV, *Chama*, pl. VI, fig. 29.
1853. *Chama lobata* Mörch, Cat. Yoldi, II, p. 37.
1857. *Chama lobata* Adams, H. & A., Gen. Rec. Moll., II, p. 463.
1860. *Chama lobata* Chenu, Man. Conchyliol., II, p. 116, figs. 552, 553.
1884. *Chama lobata* Grasset, Ind. Test. Viv,, p. 277.
1888. *Chama lobata* Clessin in Martini & Chemn. Conch.-Cab. (N. F.), VIII (5), *Chamiden*, p. 13. pl. VI, figs. 3, 4.
1890. *Chama* (*Accinella*) *lobata* Paetel, Cat. Conch. Samm., III, p. 122.
1891. *Chama lobata* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 230.
1928. *Chama lobata*, Lamy, Journ. Conchyliol., LXXI, p. 338.

Chama lobata is one of the dextral species belonging to the subgenus *Chama s.s.*, of ODHNER's scheme. The species is easily recognised by its shell valves being concentrically laminated, and the upper free right valve bearing laminae foliated in the middle and towards the posterior margin. Both valves, further, are lobate anteriorly.

Distribution: — The habitat of *C.* (*C.*) *lobata* was given by BRODERIP as the "Island of Nevis, West Indies", but as REEVE suggested this is wrong, as all authentic specimens of the species are from off the Chinese coast.

The "Siboga" Expedition collected 6 young valves from the Bay of Kambaragi, Tanah Djampeah (St. 64).

2. *Chama* (*Chama*) *iostoma* Conrad.

1837. *Chama iostoma* Conrad, Journ. Acad. Nat. Sci. Philadelphia, VII, p. 256.
1847. *Chama iostoma* Reeve, Conch. Icon., IV, *Chama*, pl. II, fig. 7.
1858. *Chama iostoma* Adams, H. & A., Gen. Rec. Moll., II, p. 463.
1860. *Chama iostoma* Reeve, Elem. Conch., II p. 78.
1861. *Chama iostoma* Tristram, Proc. Zool. Soc. London, p. 405.
1869. *Chama jostoma* (sic) Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 884.
1874. *Chama iostoma* Dunker, Cat. Mus. Godeffroy, V, p. 172.
1884. *Chama iostoma* Grasset, Ind. Test. Viv., p. 277.
1889. *Chama iostoma* Clessin in Martini-Chemn., Conch.-Cab. (N. F.), VIII (5) Chamiden, p. 19, pl. VII, fig. 4.
1890. *Chama* (*Chama*) *iostoma* Paetel, Cat. Conch. Samm., III, p. 122.
1897. *Chama iostoma* Sowerby, Mar. Shells S. Africa, Supplement, p. 26.
1903. *Chama iostoma* Hidalgo, Obras Malacol., II, p. 381.
1905. *Chama iostoma* Hidalgo, Cat. Filip., p. 349.
1911. *Chama Ruppelli* Pelseneer (non Reeve), "Siboga" Lamellibranches (Anat.), p. 58.
1925. *Chama iostoma* Faustino, Summary Philippine Mar. Freshw. Moll. p. 52.

ODHNER (loc. cit., p. 74) suggests that *C. iostoma* is probably based on juvenile shells of *C. lazarus* Linn. The specimens collected by the "Siboga" Expedition all have a thick encrustation of calcareous matter deposited by marine Algae, and it is not possible to study the external sculpture of their shells. In general form, shape, etc., they agree with CONRAD's description and specimens identified as *C.* (*C.*) *iostoma* in the British Museum Collections.

MACANDREW[1]) recorded *Chama rüppelli* Reeve from the Red Sea, but COOKE[2]) in his valuable revision of MACANDREW's Red Sea Mollusca considered this species to be the same as *Chama cornucopia* Reeve[3]). In view of COOKE's notes, the remarks of ODHNER (op. cit., p. 77) and TOMLIN[4]) I have re-examined the material in the British Museum (Nat. Hist.), London, and find that the specimens on which the species *C. rüppelli* Reeve was based belong to two distinct subgenera, as now restricted. The figures 30*a*, *b* on pl. VI of "Conch. Icon." are of a sinistral *Chama* or *Pseudochama* of ODHNER, while there are other shells also from the Red Sea, labelled *C. rüppelli* by REEVE, which are to be referred to *C.* (*C.*) *iostoma* Conrad. It is impossible to be certain about MACANDREW's specimens, but if these were dextral, they also must have been specimens of *C.* (*C.*) *iostoma*.

Distribution: — *C.* (*C.*) *iostoma* appears to have a wide range in the Indo-Pacific and has also been recorded from the Red Sea.

The "Siboga" Expedition collected shells of this species from the Wunoh Bay, North-West coast of Waigeu Island (St. 152), Sanana Bay, East coast of Sula Besi (St. 193) and Anchorage off Kilsuin, west coast of Kur Island (St. 250).

3. *Chama (Chama) fibula* Reeve.

1846. *Chama fibula* Reeve, Conch. Icon., IV, *Chama*, pl. V, fig. 27.
1860. *Chama fibula* Reeve, Elem. Conch., II, p. 78.
1880. *Chama fibula* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 323.
1884. *Chama fibula* Grasset, Ind. Test, Viv., p. 277.
1889. *Chama fibula* Clessin in Martini-Chemn., Conch.-Cab. (N. F.), VIII (5), Chamiden, p. 50, pl. XX, fig. 4.
1896. *Chama* (*Chama*) *fibula*, Casto de Elera, Cat. Sist. Filip., p. 776.
1899. *Chama fibula* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XIII, p. 135.
1903. *Chama fibula* Hidalgo, Obras Malacol., I, p. 378.
1905. *Chama fibula* Hidalgo, Cat. Filip., p. 349.
1909. *Chama fibula* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p, 135.
1917. *Chama fibula* Hedley, Proc. Linn. Soc. N. S. Wales, XLI, p. 682.
1918. *Chama fibula* Hedley, Journ. Proc. Roy. Soc. N. S. Wales, LI, Supplement, p. M 17.
1825. *Chama fibula* Faustino, Summary Philippine Mar. Freshw. Moll., p. 51.
1929. *Chama fibula* Dautzenberg, Faune Colon. Français., III, p. 591.

Chama (*Chama*) *fibula* appears to be a variable species, and probably *C.* (*C.*) *jukesii* Reeve[5]) is also based on slightly different specimens of this variable species.

Distribution: — *C.* (*C.*) *fibula* has so far not been recorded from outside the boundaries of the Pacific Ocean.

The "Siboga" Expedition collected shells of this species in the Bay of Bima (St. 47), the Bay of Nangamessi, Sumba (St. 53), Anchorage off North Ubian (St. 99) and at Maccasar.

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1) MACANDREW, R. — Ann. Mag. Nat. Hist., (4) VI, p. 447 (1870).
2) COOKE, A. H. — Ann. Mag. Nat. Hist., (5) XVIII, p. 96 (1886).
3) REEVE, L. A. — Conch. Icon., IV, *Chama*, pl. VI, figs. 30*a*, *b* (1847).
4) TOMLIN, T. R. LE B. — Trans. Zool. Soc. London, XXVI, p. 305 (1927)
5) REEVE, L. A. — Conch. Icon., IV, *Chama*, pl. VII, fig. 39 (1847).

4. *Chama* (*Chama*) spp.

A number of very young shells apparently belonging to several species of the genus *Chama* collected at St. 47, St. 79^a, St. 99 and St. 116 can not be identified specifically.

5. *Chama* (*Pseudochama*) sp.

A specimen of the subgenus *Pseudochama* Odhner brought up in a trawl at St. 289 (9° 0′.3 S., 126° 24′.5 E., 112 metres) is too young for specific identification.

Family Gariidae.

Genus **Gari** Schumacher.

1817. *Gari* Schumacher, Essai Nouv. Syst., p. 127.
1818. *Psammobia* Lamarck, Anim. sans Vertèb., V, p. 511.
1856. *Gari* Adams, H. & A., Gen. Rec. Moll., II, p. 389.
1856. *Psammobia* Reeve, Conch. Icon., X, *Psammobia*, pl. I (explanation).
1880. *Gari* Bertin, Nouv. Archive Mus. d'Hist. Nat. Paris. (2) III, p. 103.
1887. *Psammobia* Fischer, P., Man. Conchyliol., p. 1104.
1900. *Psammobia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia. III, p, 974.
1930. *Gari* Stewart, Special Publication Acad. Nat. Sci. Philadelphia N^0 3, p. 280.

Dall and Stewart have discussed at length the reasons against and for accepting the generic name *Gari* of Schumacher. I agree with Stewart in adopting *Gari* in preference to the later name *Psammobia* Lamarck. The genotype is *Gari vulgaris* Schumacher = ? *Tellina gari* Linn., but as this form cannot be identified with any certainty, the name must remain a *nomen dubium*, and I agree with Bucquoy, Dautzenberg and Dollfus and Stewart that the valves figured by Schumacher as *Gari vulgaris* represent *Tellina fervensis* Gmelin.

The subgenera represented in the "Siboga" collection are *Gari s. s.*, — type *Gari fervensis* (Gmelin), *Gobraeus* Leach[1]) — type *Gari* (*Gobraeus*) *vespertinus* Gmelin, and *Grammatomya* Dall[2]) — type *Gari* (*Grammatomya*) *squamosa* (Lam.).

1. *Gari* (*Gari*) *maculosa* (Lam.).

1782. *Tellina scabra* Chemitz, Conch.-Cab., VI, p. 102, pl. X, fig. 94.
1788. *Tellina scabra* Schröter, Conch.-Cab. Namen Reg., p. 103.
1790. *Tellina gari* var. *B.* Gmelin, Syst. Nat., (ed. XIII), p. 3230.
1797. Bruguière, Encyclopéd. Méthod., pl. CCXXVIII, fig. 2.
1798. *Psammobia gari* var. *C.* Spengler, Nat. Hist. Selsk., IV (II), p. 72.
1818. *Psammobia maculosa* Lamarck, Anim. sans Vertèb., V, p. 513.
1824. *Psammobia maculosa* Dubois, Epitome, p. 55.
1825. *Psammobia maculosa* Sowerby, Cat. Tankerville, p. 8.
1826. *Psammobia maculata* Blainville, Dict. Sci. Nat. XLIII, p. 478.
1832. *Psammobia maculata* Deshayes, Encyclopéd. Méthod., III, p. 852.

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1) Leach, W. E. — Syn. Moll. Great Britain, p. 265 (1852).
2) Dall, W. H. — Proc. Acad. Nat. Sci. Philadelphia, p. 57 (1898) and loc. cit, p. 975 (1900).

1835. *Psammobia maculosa* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 174.
1843. *Psammobia Maculosa* Hanley, Rec. Biv. Shells, p. 57, pl. XI, fig. 28.
1845. *Psammobia maculosa* Catlow & Reeve, Conch. Nomencl., p. 21.
1848. *Psammobia maculosa* Chenu, Illustr. Conchyliol., pl. I, figs. 3, 3*a*, *b*; var. figs. 4, 4*a*, *b*; young figs. 5, 5*a*, *b*.
1850. *Psammobia maculosa* Deshayes in Cuvier, Règne Animal, pl. CXII, figs. 3, 3*a*.
1855. *Psammobia ornata*, *P. corrugata*, *P. Marmorea* and *P. rubicunda* Deshayes, Proc. Zool. Soc. London (vol. for 1854), pp. 323, 324.
1856. *Psammobia corrugata*, *P. ornata*, *P. marmorea* and *P. rubicunda* Reeve, Conch. Icon., X. *Psammobia*, pl. II, fig. 9; pl. IV, figs. 26*a*, *b*; pl. V, fig. 34.
1856. *Gari corrugata*, *G. marmorea*, *G. ornata* and *G. rubicunda* Adams, H. & A., Gen. Rec. Moll., II, p. 390.
1860. *Psammobia corrugata*, *P. ornata*, *P. marmorata* and *P. rubicunda* Reeve, Elem. Conch., II, pp. 128—129.
1868. *Gari corrugata*, *G. ornata*, *G. rubicunda* Tryon, Amer. Journ. Conch., IV, pp. 74, 75.
1869. *Gari ornata* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien XIX, p. 880.
1871. *Psammobia ornata* Lischke, Japan. Meeresconch., II, p. 173
1874. *Psammobia ornata* Lischke, Japan. Meeresconch., III, p. 97.
1874. *Gari rubicunda* Dunker, Cat. Mus. Godeffroy, V, p. 167.
1876. *Psammobia ornata* Tapparone-Canefri. Viag. "Magenta", p. 225.
1880. *Gari maculosa*, *G. rubicunda*, *G. ornata* and *G. marmorea*, Bertin, Nouv. Archiv. Mus. Paris, (2) III, pp. 105, 106.
1882. *Psammobia ornata* and *P. corrugata* Dunker, Ind. Moll. Mar. Japon., pp. 186, 187.
1884. *Psammobia ornata*, Grasset, Ind. Test. Viv., p. 252.
1890. *Psammobia* (*G.*) *corrugata*, *P.* (*G.*) *maculosa*, *P.* (*G.*) *ornata*, *P.* (*G.*) *marmorea* and *P.* (*G.*) *rubicunda*, Paetel, Cat. Conch. Samm., III, pp. 39, 40.
1891. *Psammobia* (*Heteroglypta*) *corrugata* Smith, Proc. Zool. Soc. London, p. 425.
1895. *Psammobia corrugata* and *P. ornata* Pilsbry, Cat. Mar. Moll. Japan, p. 122.
1896. *Gari* (*Amphichaena*) *corrugata*, *G.* (*A.*) *ornata* and *G.* (*A.*) *rubicunda* Casto de Elera, Cat. Sist. Filip., pp. 719, 720.
1897. *Psammobia scabra* von Martens in Weber's Zool. Ergebn. Reise Ost.-Ind. Süss.-Brackw. Moll., IV, p. 248.
1897. *Psammobia ornata* Sowerby, Mar. Shells S. Africa, Supplement, p. 22.
1898. *Psammobia ornata* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 48.
1899. *Psammobia ornata* and *P. marmorea* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 198.
1902. *Psammobia marmorea* and *P. rubicunda*, Shopland, Proc. Malacol. Soc. London, V, p. 177.
1903. *Psommobia corrugata*, *P. ornata* and *P. rubicunda*, Hidalgo, Obras Malacol., II, pp. 76, 77.
1905. *Psammobia corrugata*, *P. ornata* and *P. rubicunda* Hidalgo, Cat. Filip., pp. 307, 308.
1906. *Gari marmorea* and *G. ornata* Melvill & Standen, Proc. Zool. Soc. London, p. 841.
1906. *Psammobia ornata* and *S. corrugata* Owston Japan. Loochooan Shells, p. 40.
1907. *Psammobia ornata* Hirase, Cat. Mar. Shells Japan, p. 35.
1909. *Psammobia scabra* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 210.
1910. *Psammobia ornata* and *P. marmorea* Hedley. Austral. Ass. Adv. Sci. XII, p. 350.
1914. *Psammobia maculosa* Dautzenberg, P. & Fischer, H., Journ. Conchyliol., LXI, p. 215, pl. VI, figs. 1—3.
1928. *Psammobia corrugata*, *P. ornata* and *P. rubicunda* Faustino, Summary Philippine Mar. Freshw. Moll., pp. 98, 99.
1929. *Gari ornata* Dautzenberg, Faun. Colon. Français., III, p. 610,

The Deshayesian species *Psammobia ornata*, *P. corrugata*, *P. marmorea* and *P. rubicunda* are all based on either colour variations or specimens with slightly coarser sculpture on the posterior region of the shells, and I consider all of them as synonyms of this widely distributed species *G.* (*G.*) *maculosa* (Lam.).

Distribution: — *G.* (*G.*) *maculosa* has a very wide range in the Indo-Pacific.

The "Siboga" Expedition collected a single young shell of this species on the Bank between the Islands of Bahuluwang and Tambolungan, South of Saleyer (St. 66).

2. *Gari* (*Gari*) *radiata* (Philippi).

1745. *Psammobia radiata* Philippi, Abbild. Beschreib. Conch., I, p. 194, pl. II, fig. 5.
1860. *Psammobia amethystus* Reeve (non Wood), Elem. Conch., II, p. 128.
1865. *Psammobia amethystus* Reeve (non Wood), Conch. Icon., X, *Psammobia*, pl. III, fig. 19.
1868. *Gari radiata* Tryon, Amer. Journ. Conch., IV, p. 75.
1880. *Gari radiata* Bertin, Nouv. Archiv. Mus. Paris, (2) III, p. 122.
1882. *Psammobia radiata* Dunker, Ind. Moll. Mar. Japon., p. 187.
1890. *Psammobia* (*Psammocola*) *radiata* Paetel, Cat. Conch. Samm., III, p. 40.
1895. *Psammobia radiata* Pilsbry, Cat. Mar. Moll. Japan, p. 122.
1897. *Psammobia radiata* von Martens, in Weber's Zool. Ergebn. Reise Ost.-Ind. Süss.-Brackw. Moll., IV, p. 244.
1903. *Psammobia radiata* Hidalgo, Obras Malacol., II, p. 85.
1906. *Psammobia radiata* Owston, Japan. Loochooan Shells, p. 40.
1906. *Hiatula* (*Psammotaea*) *radiata* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 294.
1909. *Psammobia Zonalis* Lynge, (ex parte), D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 211.

I cannot agree with SMITH[1]) that *G.* (*G.*) *radiata* is synonymous with *G. zonalis* (Lam.), as the form of the shell and the sculpture are different in the two species.

The transversely elongate shell is somewhat compressed, subequilateral, and is finely but densely striated. The posterior margin is somewhat angulate. The shells vary in colour from dirty yellow to white with a few faint radiating rays of a rose or purple colour.

Distribution: — *G.* (*G.*) *radiata* has been recorded from Ceylon, Gulf of Siam, Java, Philippines and Japan.

The "Siboga" shells were collected in the Bay of Pidjot, Lombok (St. 33) and at Tual Anchorage, Kei Islands (St. 258).

3. *Gari* (*Gari*) *pulcherrima* (Deshayes).

1855. *Psammobia pulcherrima* Deshayes, Proc. Zool. Soc. London (vol. for 1854), p. 325.
1856. *Gari pulcherrima* Adams, H. & A., Gen. Rec. Moll., II, p. 390.
1857. *Psammobia pulcherrima* Reeve, Conch. Icon., X, *Psammobia*, pl. VII, fig. 46.
1860. *Psammobia pulcherrima* Reeve, Elem. Conch., II, p. 129.
1868. *Gari pulcherrima* Tryon, Amer. Journ, Conch., IV, p. 75.
1880. *Gari pulcherrima* Bertin, Nouv. Archiv. Mus. Paris (2) III, p. 108.
1885. *Psammobia pulcherrima* Melvill & Standen, Proc. Zool. Soc. London, p. 842.
1885. *Psammobia pulcherrima* Smith, "Challenger" Lamellibranchia., p. 91.
1890. *Psammobia* (*Gari*) *pulcherrima* Paetel, Cat. Conch. Samm., III, p. 40.
1896. *Psammobia* (*Amphichaena*) *pulcherrima* Casto de Elera, Cat. Sist. Filip., p. 720.
1898. *Psammobia pulcherrima* Melvill & Sykes, Proc. Malacol. Soc. London, III. p. 48.
1899. *Psammobia pulcherrima* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 198.
1902. *Psammobia pulcherrima* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 626.
1903. *Psammobia pulcherrima* Hidalgo, Obras Malacol., II, p. 81.
1905. *Psammobia pulcherrima* Hidalgo, Cat. Filip., p. 308.

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[1]) SMITH, E. A. — "Challenger" Lamellibranchia., p. 94 (1885).

1906. *Gari pulcherrima* Melvill & Standen, Proc. Zool. Soc. London, p. 842.
1910. *Gari pulcherrima*, Hedley, Austral. Ass. Adv. Sci., XII, p. 350.
1928. *Psammobia pulcherrima* Faustino, Summary Phillippine Mar. Freshw. Moll., p. 99.

The "Siboga" specimens, which I assign to *G.* (*G.*) *pulcherrima* agree with the description of the species by Deshayes and the more detailed one by Smith. These shells agree with the shell from the "Challenger" collection reported on by Smith, except in the fact of the ribs, particularly those of the posterior region, being not so coarse.

Distribution: — *G.* (*G.*) *pulcherrima* is widely distributed in the Indo-Pacific and has also been recorded from the Persian Gulf.

The "Siboga" Shells of the species were collected in the Bay of Bima (St. 47), Buka or Cyrus Bay, south coast of Rotti Island (St. 299) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

4. *Gari* (*Gari*) *simplex* (Sowerby).

1895. *Psammobia simplex* Sowerby, Proc. Malacol. Soc. London, I, p. 159, pl. XII, fig. 21.
1906. *Gari simplex* Melvill & Standen, Proc. Zool. Soc. London, p. 842.
1909. *Psammobia simplex* Lynge. D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 212, pl. IV, figs. 6—8.

The single right valve dredged from St. 162 (between Loslos and Broken Islands, west coast of Salawatti), and which I assign to this species, agrees with Sowerby's description and figure and with Lynge's figures of the species.

Distribution: — *G.* (*G.*) *simplex* was described from Hong Kong, but has since been recorded from Singapore, Gulf of Siam and Karachi.

The "Siboga" Expedition obtained, as noted above, a single right valve at St. 162.

5. *Gari* (*Gari*) *weinkauffi* Crosse.

1817. Savigny, Descr. Egypte, Atlas, pl. VIII, fig. 1.
1827. *Psammobia maculosa* Audouin (non Lamarck), Expl. planche de Savigny, p. 195.
1856. *Psammobia pulchella* Reeve, (non Lamarck), Conch. Icon., X, *Psammobia*, pl. IV, fig. 23.
1864. *Psammobia Weinkauffi* Crosse, Journ. Conchyliol., XII, p. 17, pl. II, fig. 4.
1865. *Psammobia rosea* Vaillant (non Deshayes), Journ. Conchyliol., XIII, p. 120.
1866. *Psammobia Weinkauffi* Weinkauff, Journ. Conchyliol., XIV, p. 231.
1867. *Psammobia Weinkauffi* Weinkauff, Conch. Mittelmeer, I, p. 72.
1868. *Psammobia Weinkauffi* Tryon, Amer. Journ. Conch., IV, p. 76.
1869. *Psammobia rosea* Issel (non Deshayes), Malacol. Mar. Rosso, p. 56.
1877. *Psammobia Weinkauffi* Monterosato, Journ. Conchyliol., XXV, p. 29.
1880. *Gari Weinkauffi* Bertin, Nouv. Archiv. Mus. Paris, (2) IV, p. 114.
1885. *Psammobia Weinkauffi* Smith, "Challenger" Lamellibranchia, p. 92.
1890. *Psammobia Weinkauffi* Paetel, Cat. Conch. Samm., III, p. 41.
1897. *Psammobia* (*Heteroglypta*) *Reevei*, von Martens, in Weber's Zool. Ergebn. Reise Ost-Ind., IV, Süss.-Brackw. Moll., p. 247.
1902. *Psammobia Weinkauffi* Shopland, Proc. Malacol. Soc. London, V, p. 177.
1903. *Psammobia Bertini* Hidalgo, Obras Malacol., II, p. 86.
1905. *Psammobia pulchella* Hidalgo, (non Lamarck), Cat. Filip., p. 308.
1905. *Psammobia Weinkauffi* Tillier & Bavay, Bull. Soc. Zool. France, XXX, p. 175.
1906. *Psammobia Weinkauffi* Pallary, Mém. Inst. Egypt., VII, p. 175.

1918. *Gari weinkauffi* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIV, p. 246.
1926. *Gari weinkauffi* Pallary, Mém. Inst. Egypt., XI, p. 100, pl. XII, fig. 1, 1—3.
1927. *Gari pallida* Tomlin (non Deshayes), Trans. Zool. Soc. London, XXVI, p. 307.

There can be no doubt that *Psammobia reevei* von Martens is the same as *G. weinkauffi*, but the shells of *G. pallida* which some authors consider as synonymous with *G. weinkauffi* have the posterior ridges more distinctly marked, and the general form and proportions of the shells are different.

The sculpture on the shells of *G. weinkauffi*, though similar to that of *G. pallida*, is much less impressed.

Distribution: — The type of *G. weinkauffi* was stated as having been collected on the Algerian coast, but as BERTIN suggested, this was probably due to a mistake. The species is a true Indo-Pacific form and is also found in the Red Sea.

In the "Siboga" collection it is represented from the Bay of Pidjot, Lombok (St. 33), Bay of Bima (St. 47), between Loslos and Broken Islands, west coast of Salawati (St. 162), Anchorage off Atjatuning, west coast of New Guinea (St. 169) and Anchorage east coast of Dangar Besar, Saleh Bay (St. 313).

6. *Gari* (*Gari*) *dispar* (Deshayes).

1855. *Psammobia dispar* Deshayes, Proc. Zool. Soc. London (vol. for 1854), p. 325.
1856. *Gari dispar* Adams, H. &. A., Gen. Rec. Moll., II, p. 390.
1857. *Psammobia dispar* Reeve, Conch. Icon., X, *Psammobia*, pl. VII, fig. 48.
1860. *Psammobia dispar* Reeve, Elem. Conch., II, p. 128.
1868. *Gari dispar* Tryon, Amer. Journ. Conch., IV. p. 74.
1870. *Gari dispar* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 416.
1880. *Gari dispar* Bertin, Nouv. Archiv. Mus. Paris, (2) III, p. 107.
1886. *Psammobia dispar* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 104.
1890. *Psammobia* (*Gari*) *dispar* Paetel, Cat. Conch. Samm., III, p. 39.
1896. *Psammobia* (*Gari*) *dispar* Casto de Elera, Cat. Sist. Filip., p. 719.
1903. *Psammobia dispar* Hidalgo, Obras Malacol., II, p. 80.
1905. *Psammobia dispar* Hidalgo, Cat. Filip., p. 307.
1928. *Psammobia dispar* Faustino, Summary Philippine Mar. Freshw. Moll., p. 98.

The inverted V-shaped ribbing on the posterior part of the shell is very characteristic of *G. dispar*. The sculpture of *G. pennata* (Deshayes)[1]) from the Philippines is similar, but the ribs are much finer and the general form of the two species is altogether different.

Distribution: — *G. dispar* was described from the Philippines, and has since been recorded from the Red Sea. The "Siboga" shells were collected at the Anchorage off Seba, Savu (St. 58), Bank between the Islands of Bahuluwang and Tambolungan, south of Saleyer (St. 66) and Tual Anchorage, Kei Islands (St. 258).

7. *Gari* (*Gari*) *schepmani*, sp. nov. (Plate VII, figs. 1, 2).

This new species I have dedicated to the memory of the distinguished Dutch Conchologist, Mr. M. SCHEPMAN, who worked out the Gastropods of the "Siboga" Expedition. *G.* (*G.*) *schepmani*

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1) DESHAYES, G. P. — Proc. Zool. Soc. London (volume for 1854), p. 325 (1855), also see REEVE, L., Conch. Icon., X, *Psammobia*, pl. VII, fig. 52 (1857).

is closely allied to *G.* (*G.*) *pallida* (Deshayes)[1], but the new species is much smaller, and has a more regular, more narrow and less elongate shell; the anterior side is slightly attenuated and the posterior is broadly truncated. The sculpture is more delicate; in addition to the well marked growth lines and the oblique concentric striae there are a large number of low, vertical lines running in between the oblique striae. The posterior ridge is hardly marked, but in some young shells there are a few low, radiating ridges on the posterior wing of the shell. The shell is of a light rose colour, with a whitish periostracal covering; the nacre is shining pale with a whitish margin.

Measurements of Holotype: — Length 24 mm., height 13.2 mm., diameter 6.5 mm.

Habitat: — The Holotype and a young paratype were collected in Sapeh Bay, east coast of Sumbawa (St. 311). A young shell and some dead valves were also obtained in the Bay of Badjo, west coast of Flores (St. 50) and at Saleyer Anchorage (St. 213).

8. *Gari* (*Gari*) *sibogai*, sp. nov. (Plate VII, figs. 3, 4).

The following is a description of this new species: — species of a small size; shell transversely elongate, subequilateral; moderately inflated, thick; anterior margin narrowly rounded, posterior subtruncate, ventral border slightly arcuate; umbones subcentral, acute, directed backwards and inwards; sculpture consisting of almost regular, well impressed concentric ridges up to posterior area, where in middle region of shell a number of ridges unite in pairs and similarly to ridges in upper and lower parts of shell curve over to form with the well developed radial ridges in this area on right valve only, a beautifully decussated pattern; on left valve posterior area with only very minute concentric striae, concentric striae also developed on umbones; hinge consisting of two teeth in right and a single somewhat bifid tooth in left valve. Shells varying in colour from white, orange to rose purple; nacre of a deeper shade, shining.

Measurements of Holotype: — Length 20.2 mm., height 9.7 mm., diameter 6 mm.

Habitat: – Three shells of this interesting species were dredged at Banda Anchorage (St. 240).

Remarks: — The well developed decussate sculpture on the posterior area of the right valve and the almost microscopic concentric sculpture on the same area of the left valve are very characteristic of the species.

9. *Gari* (*Gobraeus*) *amethystus* (Wood).

1773. *La Langue bleue* Knorr, Délices des Yeux, VI, p. 22, pl. XII, fig. 2.
1782. *Tellina amethystea* ex parte and *T. gari Linnaei* (ex parte), Chemnitz, Conch.-Cab., VI, pp. 79, 100, pl. X, fig. 93.
1788. *Tellina amethystea* Schröter, Conch.-Cab. Namen Reg., p. 103.
1788. *Tellina gari* Röding (non Linn.), Mus. Boltenianum, p. 186.
1798. *Tellina gari* Spengler (non Linn.), Nat. Hist. Selsk., IV (2) p. 70.
1815. *Solen Amethystus* Wood, Gen. Conch., p. 138, pl. XXXIV, fig. 1.
1817. *Solen amethystus* Dillwyn, Descr. Cat., I, p. 68.
1818. *Psammobia caerulescens* Lamarck (ex parte), Anim. sans Vertèb., V, p. 513.
1825. *Solen Amethystus* Wood, Ind. Test., p. 16, pl. III, fig. 31.
1832. *Psammobia Caerulescens* Sowerby, Gen. Shells, II, fig. 3.

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[1] Deshayes, G. P. — Proc. Zool. Soc. London (volume for 1854), p. 323 (1855).

1835. *Psammobia Caerulescens* Deshayes (ex parte) in Lamarck Anim. sans Vertèb., VI, p. 174.
1839. *Psammotaea amethystus* Anton, Verzeichniss, p. 4.
1841. *Psammobia caerulescens* Reeve, Conch. Syst., p. 77, pl. LIII, fig. 3.
1855. *Psammobia tripartita* Deshayes, Proc. Zool. Soc. London (vol. for 1854), p. 321.
1856. *Psammobia tripartita* Reeve, Conch. Icon., X, *Psammobia*, pl. III, fig. 20.
1856. ? *Gari gari* Adams, H. & A., (non Linn.). Gen. Rec. Moll., II, p. 390.
1856. *Solen amethystus* Hanley in Wood, Ind. Test., p. 20, pl. III, fig. 31.
1860. *Psammobia tripartita* Reeve, Elem. Conch., II, p. 129.
1867. *Psammobia tripartita* Mitchell, Cat. Mus. Madras, p. 62.
1868. *Gari tripartita* Tryon, Amer. Journ. Conch., IV, p. 76.
1880. *Gari amethystus* Bertin, Nouv. Archiv. Mus. Paris, (2) III, p. 114.
1884. *Psammobia tripartita* Grasset, Ind. Test. Viv., p. 252.
1890. *Psammobia (Gari) tripartita* Paetel, Cat. Conch. Samm., III, p. 41.
1896. *Psammobia (Amphichaena) tripartita* Casto de Elera, Cat. Sist. Filip., p. 721.
1897. *Psammobia (Heteroglypta) caerulescens* von Martens (ex parte), in Weber's Zool. Ergebn. Reise Ost-Ind., IV, Süss.-Brackw. Moll., p. 244.
1903. *Psammobia Amethystus* Hidalgo, Obras Malacol., II, pp. 84, 101.
1905. *Psammobia Amethystus* Hidalgo, Cat. Filip., p. 307.
1906. *Gari amethystina* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 293.
1914. *Solen amethystus* Dautzenberg & Fischer, H., Journ. Conchyliol., LXI, p. 221.
1928. *Psammobia amethystus* Faustino, Summary Philippine Mar. Freshw. Moll., p. 97.

As a result of a careful examination of the extensive collections in the British Museum (Nat. Hist.), London, I have no doubt that *P. tripartita* Deshayes is a synonym of *G.* (*G.*) *amethystus* (Wood). Reeve's figure 20 on pl. III of "Conch. Icon." cited by von Martens for *Psammobia caerulescens* is, as I have confirmed by examination of the original specimen, to be referred to *G.* (*G.*) *amethystus*. *P. caerulescens* Lam. was, as is indicated in the synonymy above, a composite species.

The transversely elongate, ellipsoidal, compressed shell of this species is of a violet colour with, in some cases, a few lighter coloured rays radiating to the ventral margin from the umbonal region. The concentric ridges are divided longitudinally in the middle region of the shell, and as a result their number in this region is twice that on the anterior or posterior parts of the shells.

Distribution: — *G.* (*G.*) *amethystus* has a wide range in the Indo-Pacific.

In the "Siboga" collection there is a single shell of this species collected at the Ambon Anchorage (St. 181).

10. *Gari* (*Grammatomya*) *squamosa* (Lamarck).

1818. *Psammobia squamosa* Lamarck, Anim. sans Vertèb., V, p. 514.
1824. *Psammobia squamosa* Dubois, Epitome, p. 55.
1826. *Psammobia squamosa* Blainville, Dict. Sci. Nat., XLIII, p. 479.
1835. *Psammobia squamosa* Deshayes, in Lamarck Anim. sans Vertèb., VI, p. 176.
1841. *Psammobia squamosa* Delessert, Rec. Coq. Lamarck, pl. V, figs. 6*a*—*c*.
1842. *Psammobia squamosa* Hanley, Rec. Biv. Shells, p. 57, pl. XI, fig. 47.
1844. *Psammobia squamosa* Chenu, Illustr. Conchyliol., pl. I, fig. 6*a*, *b*.
1845. *Psammobia squamosa* Catlow & Reeve, Conch. Nomencl., p. 21.
1850. *Psammobia rugulosa* Adams & Reeve, "Samarang" Moll., p. 81, pl. XXIV, figs. 4*a* *b*.
1855. *Psammobia squamosa* Berge, Conchylienbuch, p. 45, pl. IV, fig. 4.
1856. *Gari squamosa* Adams H. & A., Gen. Rec. Moll., II, p. 390.
1857. *Psammobia denticulata*, *P. squamosa* and *P. rugulosa* Reeve, Conch. Icon., X, *Psammobia* pl. VII, figs. 49, 50 (*a*, *b*.) 51.

1860. *Psammobia denticulata*, *P. squamosa* and *P. regulosa* Reeve, Elem. Conch., pp. 128, 129.
1868. *Gari squamosa* Tryon, Amer. Journ. Conch., IV, p. 75.
1881. *Gari squamosa* Bertin, Nouv. Archiv. Mus. Paris, (2) III, p. 106.
1884. *Psammobia squamosa* and *P. regulosa* Grasset, Ind. Test. Viv., p. 252.
1884. *Gari* (*Heteroglypta*) *squamosa* Tryon, Struct. Syst. Conch., III, p. 167.
1887. *Psammobia* (*Gari*) *squamosa* Fischer, P., Man. Conchyliol., p. 1104, pl. XXI, fig. 10.
1890. *Psammobia* (*Gari*) *squamosa* and *P.* (*G.*) *regulosa* Paetel, Cat. Conch. Samm., III, p. 40.
1896. *Psammobia* (*Amphichaena*) *squamosa* Casto de Elera, Cat. Sist. Filip., p. 721.
1897. *Psammobia squamosa* von Martens in Weber's Zool. Ergebn. Reise Ost.-Ind., IV, Süss.-Brackw. Moll., p. 251.
1898. *Psammobia* (*Grammatomya*) *squamosa* Dall, Proc. Acad. Nat. Sci. Philadelphia, p. 57.
1899. *Psammobia squamosa* Hedley, Mem. Austral. Mus., III, pp. 503, 529.
1903. *Psammobia squamosa* Hidalgo, Obras Malacol., II, p. 78.
1905. *Psammobia squamosa* Hidalgo, Cat. Filip., p. 308.
1906. *Gari squamosa* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 294.
1913. *Psammobia squamosa* Hedley, Proc. Linn. Soc. N. S. Wales, XXXVII, p. 274.
1913. *Psammobia squamosa* Woodward, B. B., Life of Mollusca, pl. XIX, fig. 8.
1928. *Psammobia squamosa* Faustino, Summary Philippine Mar. Freshw. Moll., p. 99.

Gari squamosa (Lam.) is the type of Dall's section *Grammatomya*, in which the strong oblique sculpture of the shells is continuous over the posterior dorsal area. In this region the ridges, which run from in front of the umbones to the posterior margin, are thicker and bear small scales. Dall's description of the hinge is incorrect, for as von Martens correctly described there is only a single tooth in the left valve and of the two in the right valve the anterior one is only feebly developed.

Distribution: — *G.* (*G.*) *squamosa* has a very wide range in the Indo-Pacific.

In the "Siboga" collection the species is represented by a single shell collected at the Banda Anchorage (St. 240).

Genus **Asaphis** Modeer.

1793. *Asaphis* Modeer, Kongl. Vet. Acad. Nya Handl., XIV, p. 176.
1799. *Capsa* Lamarck, Mém. Soc. Hist. Nat. Paris, p. 84.
1817. *Capsularis* Schumacher, Essai Nouv. Syst., p. 130.
1856. *Capsa* Reeve, Conch. Icon., X, *Capsa*, pl. I (explanation).
1856. *Asaphis*, Adams, H. & A., Gen. Rec. Moll., II, p. 389.
1858. *Asaphis* Mörch, Journ. Conchyliol., VII, p. 138.
1880. *Asaphis* Bertin, Nouv. Archiv. Mus. d'Hist. Nat. Paris (2) III, p. 78.
1887. *Asaphis* Fischer, P., Man. Conchyliol., p. 1105.
1903. *Asaphis* Dall, Trans. Wagner. Free Inst., Sci. Philadelphia, III, p. 971.
1930. *Asaphis* Stewart, Special Publication Acad. Nat. Sci. Philadelphia. N⁰ 3, p. 285.

The genus *Asaphis* has been discussed at length by Mörch and Bertin. The genotype is *Asaphis deflorata* (Linn.).

1. *Asaphis dichotoma* (Anton).

1741. *Tellina arenosa* Rumph, Amboin. Rarit., p. 145, pl. XLV, fig. C.
1782. *Tellina anomala Indiae orientalis* Chemnitz, Conch.-Cab., VI, p. 94, pl. IX, fig. 83.
1788. *Tellina anomala* Schröter, Conch.-Cab. Namen Reg., p. 103.
1790. *Venus deflorata* var. *B.* Gmelin, Syst. Nat., (ed. XIII), p. 3274.

1818. *Sanguinolaria rugosa* var. *b* Lamarck, Anim. sans Vertèb., V, p. 511.
1835. *Sanguinolaria rugosa* var. *b* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 170.
1838. *Sanguinolaria dichotoma* Anton, Verzeichniss, p. 4.
1840. *Sanguinolaria dichotoma* Pfeiffer, Krit. Reg., p. 57.
1853. *Asaphis dichotoma* Mörch, Cat. Yoldi, II, p. 9.
1856. *Capsa deflorata* Reeve (non Linn.), Conch Icon., p. X, *Capsa*, pl. I, fig. 1*a* and 1*f*.
1856. *Asaphis dichotoma* Adams, H. & A., Gen. Rec. Moll., II, p. 389.
1858. *Asaphis Dichotoma* Mörch, Journ. Conchyliol., VII,p. 138.
1868. *Asaphis arenosa* Tryon, Amer. Journ. Conch., IV, p. 72.
1869. *Asaphis dichotoma* Frauenfeld, Verhandl. Zool.-Bot. Ges. Wien, XIX, p. 880.
1874. *Asaphis dichotoma* Dunker, Cat. Mus. Godeffroy, V, p. 67.
1880. *Asaphis arenosa* Bertin, Nouv. Archiv. Mus. d'Hist. Nat. Paris, (2) III, p. 80.
1884. *Asaphis dichotoma* Grasset, Ind. Test. Viv., p. 251.
1890. *Asaphis dichotoma* Paetel, Cat. Conch. Samm., III, p. 39.
1890. *Asaphis dichotoma* Böttger, O., Ber. Senckenberg., Nat. Ges., p. 271.
1896. *Asaphis dichotoma* Casto de Elera, Cat. Sist. Filip., p. 718.
1897. *Asaphis rugosa* var. *dichotoma* von Martens, in Weber's Ergeb. Reise Ost.-Ind., IV, Süss.-Brackw. Moll., p. 253.
1899. *Asaphis dichotoma* Mellvill & Standen, Journ. Linn. Soc. London (Zool.), XXVIII, p. 198.
1903. *Asaphis deflorata* Smith, Faun. Geogr. Maldive, Laccadive Archipel., II, p. 626.
1903. *Asaphis dichotoma* Hidalgo, Obras Malacol., II, p. 74.
1905. *Asaphis dichotoma* Dautzenberg & Fischer, H., Journ. Conchyliol., LIII, p. 233.
1905. *Asaphis dichotoma* Hidalgo, Cat. Filip. p. 306.
1906. *Asaphis dichotoma* Owston, Japan. Loochooan Shells, p. 40.
1909. *Asaphis deflorata* (ex parte, non Linn.) Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math. (7) V, p. 210.
1909. ? *Asaphis deflorata* Lamy, Bull. Mus. d'Hist. Nat. Paris, XV, p. 469.
1925. *Asaphis deflorata* (ex parte), Oostingh, Geol. Comm. Agr. Univ. Wageningen N⁰ 9, p. 311.
1928. *Asaphis dichotoma* Faustino, Summary Philippine Mar. Freshw. Moll., p. 100.

I agree with Mörch and Bertin in considering the *A. dichotoma* from the Indo-Pacific as distinct from the *A. deflorata* (Linn.) from the West Indies. Von Martens considers the former as a variety of the latter, and calls the Linnean species *A. rugosa* (Lam.), but I am of opinion that the sculpture consisting of comparatively strongly but not uniformly developed ribs, most of which divide into two or three ribs each from below the umbonal region, as pointed out by Anton, is a very good differentiating character between the East and the West Indian species. The shells collected by the "Siboga" Expedition are mostly of a uniform yellow ochre colour, a few young shells show a brick red colour shining through the outer thin periostracum. The nacre is shining white, with traces of yellow or orange and in all cases with the posterior margin of a dark violet colour. In young shells the dark violet band is not developed, and the colour of these also varies from brick red to violet.

Distribution: — *A. dichotoma* is widely distributed in the Indo-Pacific.

The "Siboga" Expedition collected a good series of shells of this species near the reef of Urk Island, Kangeang Group (St. 14), Bay of Labuan Tring, west coast of Lombok (St. 19), Anchorage off Pulu Kawassang, Paternoster Islands (St. 40), Kambaragi Bay, Tanah Djampeah (St. 64) and Anchorage off Dongala, Palos Bay, Celebes (St. 86).

Family ALOIDIIDAE.

Genus **Aloidis** Megerle.

1811. *Aloidis* Megerle, Mag. Ges. Naturf. Freunde Berlin, V, p. 67.
1844. *Corbula* Reeve, Conch. Icon., II, *Corbula* pl. I (explanation).
1856. *Corbula* Adams, H. & A., Gen. Rec. Moll., II, p. 355.
1887. *Corbula* Fischer, P., Man. Conchyliol., p. 1122.
1898. *Corbula* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 836.
1925. *Corbula* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 185.
1930. *Aloidis* Winckworth, Proc. Malacol. Soc. London, XIX, p. 15.
1930. *Corbula* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 286.

As WINCKWORTH has shown the generic name *Corbula* of RÖDING has nothing in common with *Corbula* Lamarck, and since the former must have precedence over LAMARCK's later name the generic name *Corbula*, as hitherto understood, must give way to *Aloidis* Megerle. The genotype is *Aloidis sulcata* (Lam.).

1. *Aloidis monilis* (Hinds).

1843. *Corbula monilis* Hinds, Proc. Zool. Soc. London, p. 58.
1844. *Corbula monilis* Reeve, Conch. Icon., II, *Corbula*, pl. V, fig. 35.
1845. *Corbula monilis* Catlow & Reeve, Conch. Nomencl., p. 9.
1856. *Corbula monilis* Adams, H. & A., Gen. Rec. Moll., II, p. 357.
1860. *Corbula monilis* Reeve, Elem. Conch., II, p. 156.
1868. *Corbula monilis* Tryon, Amer. Journ. Conch., IV, p. 65.
1885. *Corbula monilis* Smith, „Challenger" Lamellibranch., p. 34.
1890. *Corbula monilis* Paetel, Cat. Conch. Samm., III, p. 19.
1896. *Corbula monilis* Casto de Elera, Cat. Sist. Filip., p. 709.
1903. *Corbula monilis* Hidalgo, Obras Malacol., II, p. 33.
1905. *Corbula monilis* Hidalgo, Cat. Filip., p. 294.
1906. *Corbula monilis* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 467.
1909. *Corbula monilis* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 270, pl. V, figs. 27—30.
1910. *Corbula monilis* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.
1928. *Corbula monilis* Faustino, Summary Philippine Mar. Freshw. Moll., p. 114.

The earlier descriptions of *A. monilis* by HINDS and REEVE are incomplete, but SMITH redescribed the species in detail, while good figures of it were published by LYNGE. REEVE in his remarks on the species apparently mixed up right and left valves, for he stated that "the right valve is sunk in the left valve", whereas it is the globose left valve which is sunk in the rostrate right.

Distribution: — *A. monilis* was described from the Philippines, but the species has since been recorded from the Torres Straits, Singapore and the Gulf of Siam.

In the "Siboga" collection there are a few stray right valves of the species dredged in Madura Bay (St. 51).

2. *Aloidis subquadrata* (Melvill).

1906. *Corbula subquadrata* Mellvill, in Melvill & Standen, Proc. Zool. Soc. London, p. 843, pl. LVI, figs. 7, 7*a*.
1909. *Corbula subquadrata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7), V, p. 268.

The transverse stripes on the surface of the valves, as noted by Lynge, are not always present; in old and worn shells they are altogether absent. The species is very variable in regards to the outline and the convexity of the shells.

Distribution: — *A. subquadrata* was described from the Persian Gulf, but has also been recorded from Bombay and the Gulf of Siam.

In the "Siboga" collection it is represented by two young valves brought up in a trawl at St. 321 (6° 5′.5 S., 113° 30′ E., 82 metres).

3. *Aloidis taitensis* (Lamarck).

1818. *Corbula taitensis* Lamarck, Anim. sans Vertèb., V, p. 496.
1824. *Corbula Taitensis* Dubois, Epitome, p. 50.
1835. *Corbula Taitensis* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 139.
1843. *Corbula Tahitensis* Hanley, Rec. Biv. Shells, p. 46, pl. XII, fig. 30.
1843. *Corbula Taheitensis* Reeve, Conch. Icon., II, *Corbula*, pl. II, fig. 15.
1845. *Corbula Taheitensis* Catlow & Reeve, Conch. Nomencl., p. 10.
1856. *Corbula Taheitensis* Adams, H. & A., Gen. Rec. Moll., II, p. 357.
1860. *Corbula Taheitensis* Reeve, Elem. Conch., II, p. 156.
1868. *Corbula Taheitensis* Tryon, Amer. Journ. Conch., IX, p. 66.
1884. *Corbula Tahitiensis* Grasset, Ind. Test. Viv., p. 244.
1890. *Corbula Tahitiensis* Paetel, Cat. Conch. Samm., III, p. 20.
1891. *Corbula taheitensis* Smith, Proc. Zool. Soc. London, p. 430.
1899. *Corbula taheitensis* Hedley, Mem. Austral. Mus., III, pp. 506, 529.
1899. *Corbula taheitensis* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 199.
1900. *Corbula Taheitensis* Newton, Geol. Mag., VII, p. 557.
1902. *Corbula Taheitensis* Shopland, Proc. Malacol. Soc. London, V, p. 177.
1903. *Corbula Taitensis* Hidalgo, Obras Malacol., II, p. 31.
1905. *Corbula Taitensis* Hildalgo, Cat. Filip., p. 295.
1909. *Corbula Taheitensis* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 269.
1910. *Corbula Taitensis* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.
1928. *Corbula Taheitensis* Faustino, Summary Philippine Mar. Freshw. Moll., p, 114.

A. taitensis is closely allied to *A. modesta*, but the latter species is more solid, larger in size, and its concentric sculpture consists of a few thick, rounded bi- or trifid ribs, the interspaces are usually narrow and very shallow. *A. taitensis* is, further, more angulate anteriorly.

Distribution: — *A. taitensis* is widely distributed in the Indo-Pacific.

The "Siboga" Expedition collected a good series of shells of the species in the Bay of Bima (St. 47), on the east side of Pajunga Island, Kwandang Bay (St. 115), at the Anchorage Sawan, Siau Island (St. 125), Anchorage off Beo, Karakelang Islands (St. 131) and Anchorage north of Salomakiëe (Damar) Island (St. 144).

4. *Aloidis modesta* (Hinds).

1843. *Corbula modesta* Hinds, Proc. Zool. Soc. London, p. 57.
1843. *Corbula modesta* Reeve, Conch. Icon., II, *Corbula*, pl. II, figs. 14*a*, *b*.
1844. *Corbula modesta* Hinds, Voy. "Sulphur", p. 69, pl. XX, fig. 9.
1845. *Corbula modesta* Catlow & Reeve, Conch. Nomencl., p. 9.
1856. *Corbula modesta* Adams, H. & A., Gen. Rec. Moll., II, p. 357.
1860. *Corbula modesta* Reeve, Elem. Conch., II, p. 156.
1868. *Corbula modesta* Tryon, Amer. Journ. Conch., IV, p. 65.

1884. *Corbula modesta* Grasset, Ind. Test. Viv., p. 244.
1885. *Corbula modesta* Smith, "Challenger" Lamellibranch., p. 32.
1890. *Corbula modesta* Paetel, Cat. Conch. Samm., III, p. 19.
1896. *Corbula modesta* Casto de Elera, Cat. Sist. Filip., p. 709.
1898. *Corbula modesta* Melvill & Standen, Journ. Conch., IX, p. 84.
1903. *Corbula modesta* Hidalgo, Obras Malacol., II, p. 31.
1905. *Corbula modesta* Hidalgo, Cat. Filip., p. 294.
1906. *Corbula modesta* Melvill & Standen, Proc. Zool. Soc. London, p. 843.
1906. *Corbula modesta* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 294.
1910. *Corbula modesta* Dautzenberg, Journ. Conchyliol., LVIII, p. 31.
1928. *Corbula modesta* Faustino, Summary Philippine Mar. Freshw. Moll., p. 114.

The relationships and distinguishing characters of *A. modesta* have been discussed under *A. taitensis*.

Distribution: — *A. modesta* has a very wide range of distribution in the Indo-Pacific and SMITH [1]) has doubtfully referred specimens from Wydah on the Dahomey shore on the Atlantic to this species.

The "Siboga" collection has a good series of specimens of the species from the Bay of Kankamaraän, south coast of Kangeang (St. 16), Sailus Ketjil, Paternoster Islands (St. 37), Anchorage off Pulu Kawassang, Paternoster Islands (St. 40), Bay of Bima (St. 47), Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago (St. 93), Anchorage off North Ubian (St. 99), Anchorage off Pulu Tongkil, Sulu Archipelago (St. 109) and Banda Anchorage (St. 240).

5. *Aloidis crassa* (Hinds). (Plate VII, figs. 5—8).

1843. *Corbula crassa* Hinds, Proc. Zool. Soc. London, p. 55.
1843. *Corbula crassa* Reeve, Conch. Icon., II; *Corbula*, pl. 1, figs. 8*a—c*.
1844. *Corbula crassa* Hinds, Voy. "Sulphur", p. 67, pl. XX, figs. 1—3.
1845. *Corbula Crassa* Hanley, Rec. Biv. Shells, Appendix, p. 344, pl. XII, fig. 29.
1856. *Corbula crassa* Adams, H. & A., Gen. Rec. Moll., II, p. 356.
1860. *Corbula crassa* Reeve, Elem. Conch., II, p. 156.
1868. *Corbula crassa* Tryon, Amer. Journ. Conch., IV, p. 64.
1869. *Corbula crassa* Dunker, Cat. Mus. Godeffroy, IV, p. 107.
1881. *Corbula crassa* de Rochebrune, Bull. Soc. Philomat. Paris, (7) V, p. 15.
1884. *Corbula crassa* Grasset, Ind. Test. Viv., p. 244.
1884. *Corbula crassa* Brazier, Proc. Linn. Soc. N. S. Wales, IX, pp. 799, 990.
1885. *Corbula crassa* Smith, "Challenger" Lamellibranch., p. 30.
1887. *Corbula crassa* von Martens, Journ. Linn. Soc. London (Zool.), XXI, p. 217.
1890. *Corbula crassa* Paetel, Cat. Conch. Samm., III, p. 18.
1891. *Corbula crassa* Smith, Proc. Zool. Soc. London, p. 435.
1891. *Corbula crassa* Fischer, P., Bull. Soc. Nat. Hist. d'Autun, IV, p. 159.
1898. *Corbula crassa* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 48.
1899. *Corbula crassa* Melvill & Standen, Journ. Linn. Soc. London (Zool.), XXVII, p. 199
1903. *Corbula crassa* Hidalgo, Obras Malacol., II, p. 30.
1905. *Corbula crassa* Hidalgo, Cat. Filip., p. 293.
1906. *Corbula crassa* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 467.
1906. *Corbula crassa* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 262.
1906. *Corbula crassa* Standen & Leicester, Ceylon Pearl Oyster Rept., V, p. 294.
1909. *Corbula (Aloidis) crassa* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 265.
1910. *Corbula crassa* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.

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[1]) SMITH, E. A. — Proc. Zool. Soc. London, p. 728 (1871).

1916. *Corbula crassa* Hedley, Journ. Proc. Roy. Soc. W. Australia, I, p. 169.
1917. *Corbula crassa* Odhner, Kungl. Sv. Vet. Akad. Handl., LII, Nº 16, p. 26.
1928. *Corbula crassa* Faustino, Summary Philippine Mar. Freshw. Moll., p. 113.

Young shells of *A. crassa* vary greatly in outline, thickness and sculpture from adult shells of the species. I figure a series to illustrate the changes undergone by the shells during growth.

Distribution: — *A. crassa* has a wide range in the Southern Pacific and has been recorded as far west as the Gulf of Manaar in the Indian Ocean.

In the "Siboga" collection it is represented from the Bay of Bima (St. 47), Bay of Badjo, west coast of Flores (St. 50), west of Kwandang Bay entrance (St. 116), between the Islands of Wowoni and Buton, northern Entrance of Buton Strait (St. 204) and Sapeh Bay, east coast of Sumbawa (St. 311).

6. *Aloidis tunicata* (Hinds).

1843. *Corbula tunicata* Hinds, Proc. Zool. Soc. London, p. 55.
1843. *Corbula tunicata* Reeve, Conch. Icon., II, *Corbula*, pl. I, fig. 5.
1844. *Corbula tunicata* Hinds, Voy. "Sulphur", p. 68, pl. XX, fig. 4, 5.
1845. *Corbula tunicata* Catlow & Reeve, Conch. Nomencl., p. 10.
1848. *Corbula tunicata* Krauss, Südafr. Moll., p. 2.
1856. *Corbula tunicata* Adams, H. & A., Gen. Rec. Moll., II, p. 357.
1860. *Corbula tunicata* Reeve, Elem. Conch., II, p. 157.
1867. *Corbula tunicata* Angas, Proc. Zool. Soc. London, p. 913.
1868. *Corbula tunicata* Tryon, Amer. Journ. Conch., IV, p. 66.
1874. *Corbula tunicata* Dunker, Cat. Mus. Godeffroy, V. p. 165.
1876. *Corbula tunicata* Tapparone-Canefri, Viag. "Magenta", p. 224.
1884. *Corbula tunicata* Grasset, Ind. Test., Viv., p. 244.
1884. *Corbula tunicata* Smith, Rept. Voy. "Alert", p. 103.
1885. *Corbula tunicata* Smith, "Challenger" Lamellibranch., p. 29.
1887. *Corbula tunicata* von Martens, Journ Linn. Soc. London (Zool.), XXI, p. 217.
1890. *Corbula tunicata* Paetel, Cat. Conch. Samm., III, p. 20.
1892. *Corbula tunicata* Sowerby, Mar. Shells S. Africa, p. 55.
1896. *Corbula tunicata* Casto de Elera, Cat. Sist. Filip., p. 710.
1898. *Corbula tunicata* Tate, Trans. Roy. Soc. S. Australia, XXII, p. 68.
1903. *Corbula tunicata* Pritchard & Gatliff, Proc. Roy. Soc. Victoria, XVI, p. 101.
1903. *Corbula tunicata* Hidalgo, Obras Malacol., II, p. 29.
1905. *Corbula tunicata* Hidalgo, Cat. Filip., p. 295.
1909. *Corbula tunicata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 266.
1910. *Corbula tunicata* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.
1918, *Corbula tunicata* Hedley, Journ. Proc. Roy. Soc. N. S. Wales, LI, p. M. 31.
1928. *Corbula tunicata* Faustino, Summary Philippine Mar. Freshw. Moll., p. 114.

LYNGE includes *A. scaphoides* (Hinds) in the synonymy of *A. tunicata*, but the two species are quite distinct. In *A. tunicata* the shells are comparatively more elongate, more rostrate, with a more prominent sculpture, and have the umbonal region much depressed and lying almost at right angles to the hinge-line.

Distribution: — *A. tunicata* is widely distributed in the Indo-Pacific Region.

In the "Siboga" collections there are two shells of the species collected in Sulu Harbour, Sulu Island (St. 104) and Sapeh Bay, east coast of Sumbawa (St. 311).

Family Solenidae.

Genus **Solecurtus** Blainville.

1824. *Solecurtus* Blainville, Dict. Sci. Nat., XXXII, p. 351.
1825. *Solecurtus* Blainville, Man. Malacol., p. 568.
1844. *Solenocurtus* Brown, Conch. Great Britain, p. 113.
1847. *Phorus* Gray, Proc. Zool. Soc. London, p. 189.
1856. *Pharus* Adams, H. & A., Gen. Rec. Moll., II, p. 343.
1874. *Solecurtus* Sowerby, in Reeve Conch. Icon., XIX, *Solecurtus*, pl. I (explanation).
1887. *Pharus* Fischer, P., Man. Conchyliol., p. 1108.
1897. *Solecurtus* von Martens in Weber's Zool. Ergebn. Reise Ost- Ind., IV, Süss-Brackw. Moll., p. 255.
1900. *Solecurtus* Dall, (ex parte), Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 958.

The correct spelling of this genus is *Solecurtus* and not *Solenocurtus*. For good definitions of the genus reference may be made to Adams, Fischer and von Martens, while Dall may be consulted for the historical account. The genotype is *Solenocurtus legumen* (Linn.).

1. *Solecurtus* (*Azor*) *coarctatus* (Gmelin).

1782. *Solen constrictus* etc. Chemnitz, Conch.-Cab., VI, pp. 39, 62, pl. VI, fig. 45.
1788. *Solen constrictus* Schröter, Conch.-Cab. Namen Reg., p. 97.
1790. *Solen coarctatus* Gmelin, Syst. Nat. (ed. XIII), p. 3227.
1793. *Solen emarginatus* Spengler, Skrivt. Nat. Selsk., III, Hft. 7, p. 105.
1802. *Solen coarctatus* Bosc, Hist. Nat. Coq., III, p. 14.
1817. *Solen coarctatus* Dillwyn, Descr. Cat., I, p. 64.
1818. *Solen coarctatus* and *S. constrictus* Lamarck, Anim. sans Vertèb., V, p. 455.
1827. *Solen constrictus* Blainville, Dict. Sci. Nat., XLIX, p. 421.
1835. *Solen coarctatus* and *S. constrictus* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 59.
1852. *Macha Scheepmakeri* Dunker, Zeitschr. Malakozool., IX, p. 56.
1861. *Azor oblongus* and *A. solidus* Dunker, Proc. Zool. Soc. London, p. 425.
1861. *Solen abbreviatus* Gould, Proc. Boston Soc. Nat. Hist., VIII, p. 26.
1862. *Solen abbreviatus* Gould, Otia Conch., p. 164.
1869. *Azor* (*Macha*) *Scheepmakeri* Dunker, Novitat. Conch., II, p. 121, pl. XXXIX, figs. 10, 11.
1874. *Solecurtus oblongus*, *S. solidus* (non Gray), *S. abbreviatus* and *S. scheepmacheri* (sic) Sowerby in Reeve, Conch. Icon., XIX, *Solecurtus*, pl. I, figs. 2, 3, pl. II, figs. 6*a*, *b*, 14.
1884. *Macha* (*Azor*) *coarctata* Tryon, Struct. Syst. Conch., III, p. 134, pl. CVI, fig. 14.
1885. *Solecurtus* (*Azor*) *coarctatus* Smith, "Challenger" Lamellibranch., p. 79.
1885. *Solecurtus abbreviatus* de Morgan, Bull. Soc. Zool. France, X, p. 366.
1886. *Solecurtus coarctatus* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 108.
1888. *Solecurtus abbreviatus* Clessin in Martini-Chemn., Conch.-Cab. (N. F.), XI (3) Solenaceen, p. 93, pl. XXII, fig. 3.
1890. *Solecurtus* (*Azor*) *abbreviatus* Paetel, Cat.-Conch. Samm., III, p. 14.
1895. *Solecurtus constrictus* Pilsbry, Cat. Mar. Moll. Japan, p. 121.
1897. *Solecurtus* (*Macha*) *scheepmakeri* von Martens in Weber's Zool. Ergebn. Reise Ost-Ind., IV, Süss-Brackw. Moll., p. 259.
1898. *Solecurtus* (*Azor*) *coarctatus* Melvill & Sykes, Proc. Malacol. Soc. London, III, p. 48.
1899. *Solecurtus* (*Azar*, sic) *coarctatus* Melvill & Standen, Trans. Linn. Soc. London (Zool.), XXVII, p. 198.
1906. *Solecurtus* (*Azor*) *coarctatus* Smith, Ann. Mag. Nat. Hist., (7) XVIII, p. 263.
1906. *Solecurtus constrictus* Owston, Japan. Loochooan Shells, p. 41.
1906. *Solecurtus coarctatus* Melvill & Standen, Proc. Zool. Soc. London, p. 844.
1908. *Novaculina andamanensis* Preston, Rec. Ind. Mus., II, p. 209, pl. XVI, fig. 40.

1909. *Solecurtus* (*Azor*) *emarginatus* (ex parte) Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math. (VII) V, p. 279.
1910. *Psammosolen coarctatus* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.

I have examined the collections of the genus *Solecurtus* in the British Museum (Nat. Hist.), London, and am able to confirm SMITH's conclusions about *S. abbreviatus*, *Macha sheepmakeri*, *Azor oblongus* and *A. solidus* being all synonyms of *S.* (*A.*) *coarctatus*. *Novaculina andamanensis* Preston is also based on a young shell of this species.

S. (*A.*) *coarctatus* is distinguished by a narrow depressed ray which runs obliquely across the middle of the valves.

Distribution: — *S.* (*A.*) *coarctatus* is widely distributed in the Indo-Pacific.

In the "Siboga" collection it is represented by stray valves collected in the Bay of Bima (St. 47), Bay of Badjo, west coast of Timor (St. 50) and Waru Bay, North coast of Ceram (St. 174).

Genus **Cultellus** Schumacher.

1817. *Cultellus* Schumacher, Essai Nouv. Conch., p. 130.
1845. *Cultellus* Cray, Ann. Mag. Nat. Hist., (2) XIV, p. 24.
1856. *Cultellus* Adams, H. & A., Gen. Rec. Moll., II, p. 344.
1860. *Enisculus* Adams, H., Proc. Zool. Soc. London, p. 369.
1874. *Cultellus* Sowerby in Reeve, Conch. Icon., XIX, *Cultellus* pl. I (explanation).
1887. *Cultellus* Fischer, P., Man. Conchyliol., p. 1109.
1897. *Cultellus* von Martens in Weber's Zool. Ergebn. Reise Ost-Ind., IV, Süss.-Brackw., Moll., p. 263.
1900. *Cultellus* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 957.

I agree with DALL that *Enisculus* H. Adams, is synonymous with *Cultellus*, *s.s.* The genotype has been accepted as *Cultellus lacteus* (Spengler) = *Cultellus maximus* (Gmelin), but in accordance with the strict application of the Rules of zoological nomenclature *Cultellus cultellus* (Linnaeus) should be taken as the genotype.

1. *Cultellus* (*Cultellus*) *cultellus* (Linnaeus) var. *lividus* Dunker.

1861. *Cultellus lividus* Dunker, Proc. Zool. Soc. London, p. 423.
1867. *Cultellus lividus* Conrad, Amer. Journ. Conch., III, p. 26.
1874. *Cultellus lividus* Sowerby in Reeve, Conch. Icon., XIX, *Cultellns*, pl. I, figs. 1*a*, *b*.
1888. *Cultellus lividus* Clessin in Martini-Chemn. Conch-Cab. (N. F.), XI (3) Solenaceen, p. 40, pl. XIV, fig. 4.
1890. *Cultellus lividus* Paetel, Cat. Conch. Samm., III, p. 12.
1896. *Cultellus lividus* Casto de Elera, Cat. Sist. Filip., p. 707.
1903. *Cultellus lividus* Hidalgo, Obras Malacol., II, p. 22.
1905. *Cultellus lividus* Hidalgo, Cat. Filip., p. 292.
1909. *Cultellus* (*Enisculus*) *cultellus* (ex parte) Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 276.
1911. *Cultellus cultellus* Pelseneer (nec. Linn.), "Siboga" Lamellibranches (Anat.), pp. 64, 65, pl, XXII, fig. 6.

I agree with VON MARTENS [1]) that DUNKER's species *C. lividus* is only a variety of the highly variable *Cultellus cultellus*. In this variety the shells are more inflated, the dorsal and ventral margins are not so arcuate and the valves at the anterior end gape more strongly than in the typical *C. cultellus*.

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[1]) VON MARTENS, E. — in Weber's Zool. Ergebn. Reise Ost-Ind., IV, Süss.-Brackw. Moll., p. 270 (1897).

Distribution: — *C.* (*C.*) *cultellus* var. *lividus* was described from the Philippines.

In the "Siboga" collection it is represented by a good series of shells collected in the Madura Strait (St. 2), Bay of Badjo, west coast of Flores (St. 50), Saleyer (St. 71), between Loslos and Broken Island, west coast of Salawatti (St. 162) und Saleyer Anchorage (St. 213).

2. *Cultellus* (*Cultellus*) *maximus* (Gmelin).

1782. *Leguminum maxima* etc. Chemnitz, Conch.-Cab., VI, pp. 39, 51, pl. V, fig. 35.
1788. *Leguminum maxima* Schröter, Conch.-Cab. Namen Reg., p. 57.
1790. *Solen maximus* Gmelin, Syst. Nat., (ed. XIII), p. 3227.
1793. *Solen lacteus* Spengler, Skrivt. Nat. Selsk., III, p. 94.
1797. Bruguière, Encycloped. Méthod., pl. CCXXIII, fig. 5.
1798. *Solen Nicobaricus* Röding, Mus. Boltenianum, p. 155.
1817. *Solen magnus* Dillwyn, Descr. Cat., I, p. 61.
1817. *Solen magnus* Schumacher, Essai Nouv. Syst., p. 130, pl. VII, figs. 4*a*, *b*.
1818. *Solen planus* Lamarck, Anim. sans Vertèb., p, 453.
1824. *Solen planus* Dubois, Epitome, p. 40.
1825. *Solen planus* Sowerby, Cat. Tankerville, p. 5.
1825. *Solen magnus* Wood, Ind. Test., p. 15, pl. III, fig. 17.
1827. *Solen planus* Blainville, Dict. Sci. Nat., XLIX, p. 427.
1832. *Solen planus* Deshayes, Encycloped. Méthod., II, p. 960.
1835. *Solen planus* and *S. maximus* Deshayes in Lamarck Anim. sans Vertèb., VI pp. 56, 57.
1840. *Solen planus* Pfeiffer, Krit. Reg., p. 56.
1843. *Solen planus* Chenu, Illustr. Conchyliol., *Solen*, pl. II, fig. 3. pl. V, fig. 7.
1843. *Solen Planus* Hanley, Rec. Biv. Shells, p. 13.
1853. *Solen* (*Cultellus*) *maximus* Philippi, Handbuch Malakol., p. 331.
1853. *Cultellus maximus* Mörch, Cat. Yoldi, II, p. 7.
1856. *Cultellus maximus* Adams, H. & A., Gen. Rec. Moll., p. 345.
1858. *Cultellus orientalis* and *C. maximus* Dunker, Novitat. Conch. I, p. 10, pl. III, fig. 3, p. 11, pl. III, fig. 4.
1860. *Solecurtus maximus* Reeve, Elem. Conch., II, p. 165.
1862. *Cultellus planus* Chenu, Man. Conchyliol., II, p. 23, fig. 100.
1874. *Cultellus lacteus* and *C. maximus* Sowerby in Reeve Conch. Icon., XIX, *Cultellus*, pl. 1, figs. 2, 3.
1884. *Cultellus maximus* Grasset, Ind. Test. Viv., p. 242.
1888. *Cultellus maximus* and *C. planus* Clessin in Martini-Chemn., Conch.-Cab. (N. F.), XI (3) Solenaceen, p. 17, pl. XVI, fig. 4, p. 48, pl. V, fig. 6.
1890. *Cultellus lacteus, C. maximus,* and *C. planus*, Paetel, Cat. Conch. Samm., III, pp. 12, 13.
1897. *Cultellus maximus* von Martens, in Weber's Zool. Ergebn. Reise Ost-Ind., IV, Süss-Brackw. Moll., p. 263.

There can be no doubt that *C. lacteus*, *C. planus* and *C. orientalis* are all synonyms of *C. maximus*. The species is very variable, and exhibits a certain amount of variation in the form and sculpture of the shells.

Distribution: — *C.* (*C.*) *magnus* has a wide range in the Indo-Pacific.

In the "Siboga" collection there is a single young left valve of this species collected in Ketapang Bay, west coast of Kangeang Island (St. 317).

Family Saxicavidae.

Genus **Saxicava** Fleurian de Bellevue.

1802. *Saxicava* Fleurian de Bellevue, Bull. Soc. Philomat. Paris, N⁰ 62, pp. 5, 10.
1818. *Saxicava* Lamarck, Anim. sans Vertèb., V, p. 501.
1856. *Saxicava* Adams, H. & A., Gen. Rec. Moll., II, p. 348.
1887. *Saxicava* Sowerby in Reeve, Conch. Icon., XX, *Saxicava*, pl. I, (explanation).
1887. *Saxicava* Fischer, P., Man. Conchyliol., p. 1126.
1898. *Saxicava* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 833.
1925. *Saxicava* Lamy, Journ. Conchyliol., LXVIII, p. 218.

For a detailed account of the genus *Saxicava* reference may be made to Lamy's recent revision noted above. The genotype is *Saxicava arctica* (Linn.).

1. *Saxicava australis* (Lamarck).

1818. *Corbula Australis* Lamarck, Anim. sans Vertèb., V, p. 495.
1818. *Saxicava Australis, S. veneriformis* and *Petricola linguatula* Lamarck, loc. cit., pp. 502, 505.
1825. *Corbula Australis* Blainville, Man. Malacol., p. 561, pl. LXXVIII, fig. 3.
1825. *Saxicava Australis* Blainville, loc. cit., p. 572, pl. LXXX bis, fig. 4.
1835. *Corbula Australis*; *Saxicava Australis, S. veneriformis* and *Petricola linguatula* Deshayes in Lamarck, Anim. sans Vertèb., VI, pp. 138, 153, 160.
1843. *Hiatella minuta* Gray in Diffenbach, Travels New Zealand, p. 252.
1843. *Saxicava Australis* Hanley, Rec. Biv. Shells, p. 51.
1853. *Petricola linguatula* Deshayes, Cat. Conch. Brit. Mus., I, *Veneridae* etc., p. 212.
1856. *Saxicava Australis* Adams, H. & A., Gen. Rec. Moll., II, p. 349.
1865. *Saxicava Australis* Angas, Proc. Zool. Soc. London, p. 643.
1867. *Saxicava Australis* Angas, Proc. Zool. Soc. London, p. 913.
1868. *Saxicava veneriformis* Tryon, Amer. Journ. Conch., IV, p. 60.
1875. *Saxicava Australis* Sowerby in Reeve, Conch. Icon., XX, *Saxicava*, pl. II, fig. 8*a—d*.
1884. *Saxicava australis* Hutton, Proc. Linn. Soc. N. S. Wales, IX, p. 513.
1884. *Saxicava australis* Brazier, Proc. Linn. Soc. N. S. Wales, IX, p. 799.
1887. *Saxicava australis* Sowerby, Thes. Conch., V, p. 132, pl. CCCCLXXI, fig. 2.
1887. *Saxicava arctica* Tate (non Linn.), Trans. Roy. Soc. S. Australia, IX, p. 82.
1895. *Saxicava australis* Clessin, in Martini-Chemn. Conch.-Cab. (N. F.), XI (4), *Gastrochaenidae*, p. 40, pl. VI. figs. 1—4.
1895. *Saxicava australis*? and *S. australis* var. *arctica* Brazier, Proc. Linn. Soc. N. S. Wales, (2) IX, p. 179.
1913—15. *Saxicava arctica* Suter (non Linn.), Man. New Zealand Moll., p. 1012, pl. LV, figs. 6, 6*a*.
1916. *Saxicava australis* Hedley, Journ. Roy. Soc. W. Australia, I, p. 20.
1917. *Saxicava arctica* var. *australis* Odhner, Kungl. Sv. Vet. Akad. Handl., LII, N⁰ 16, p. 34.
1918. *Saxicava australis* Hedley, Journ. Proc. Roy. Soc. N. S. Wales, LI, p. M. 31.
1921. *Saxicava australis, S. veneriformis* and *Petricola linguatula* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXVII, pp. 363—364, 436.
1925. *Saxicava australis* Lamy, Journ. Conchyliol., LXVIII, p. 239.
1930. *Saxicava arctica* Thiele (nec Linn.), Fauna Südwest. Austral., V, p. 595.

Smith [1]) combined all the species of the genus *Saxicava* under the name S. *arctica* (Linn.), but this drastic treatment, as Lamy has shown, is not justified. A number of species of the genus can be distinguished, and in any case a species of sedentary molluscs like *S. arctica* can hardly be expected to have a world-wide distribution.

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[1]) Smith, E. A. — Rept. Voy. "Alert", p. 93 (1884) and "Challenger" Lamellibranchia., p. 78 (1885).

Full grown shells of *S. australis* are transversely elongate; the right valve is greatly inflated, particularly in the umbonal region, while the left valve is only slightly convex. The sculpture consists of irregular concentric striae.

Distribution: — *S. australis* has so far been recorded from the Australian waters.

In the "Siboga" collection there is a single shell of the species collected in the Bay of Nangamessi, Sumba (St. 53).

Family GASTROCHAENIDAE.

Genus **Rocellaria** Blainville.

1817. *Gastrochaena* Cuvier, (nec Spengler) Règne Anim., II, p. 490.
1829. *Rocellaria* Blainville, Dict. Sci. Nat., LVII, p. 244.
1856. *Rocellaria* Adams, H. & A., Gen. Rec. Moll., II, p. 335.
1862. *Rocellaria* Tryon, Proc. Acad. Nat. Sci. Philadelphia, p. 471.
1887. *Gastrochaena* Fischer, P., Man. Conchyliol., p. 1125.
1898. *Gastrochaena* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 823.
1915. *Rocellaria* Iredale, Proc. Malacol. Soc. London, XI, p. 297.
1925. *Gastrochaena* Lamy, Journ. Conchyliol., LXVIII, p. 286.
1925. *Gastrochaena* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 191.

A great deal of confusion has been introduced into the nomenclature of the family Gastrochaenidae by the indiscriminate use of the generic names *Gastrochaena* and *Fistulana*. I agree with IREDALE's conclusions that the name *Rocellaria* Blainville with *Rocellaria dubia* (Pennant) as type, must replace *Gastrochaena* Cuvier of modern writers, while *Gastrochaena* Spengler — type *Gastrochaena mummia* Spengler, should be used in place of *Fistulana* Bruguière, as adopted by recent workers.

In the "Siboga" collection there are representatives of two subgenera *Rocellaria s. s.*, and *Spengleria* Tryon [1]) — type *Rocellaria* (*Spengleria*) *mytiloides* (Lam.).

1. *Rocellaria* (*Rocellaria*) *macrochisma* (Deshayes).

1855. *Gastrochaena macrochisma* Deshayes, Proc. Zool. Soc. London (vol. for 1854), p. 326.
1860. *Gastrochaena macrochisma* Reeve, Elem. Conch., II, p. 175.
1862. *Rocellaria macrochisma* Tryon, Proc. Acad. Nat. Sci. Philadelphia, p. 480.
1878. *Gastrochaena macrochisma* Sowerby in Reeve, Conch. Icon., XX, *Gastrochaena*, pl. IV, fig. 29.
1887. *Gastrochaena macrochisma* Sowerby, Thes. Conch., V, p. 129, pl. CCCCLXX, fig. 29.
1890. *Gastrochaena macrochisma* Paetel, Cat. Conch. Samm., III. p. 8.
1894. *Gastrochaena macrochisma* Clessin in Martini-Chemn. Conch.-Cab. (N.F.), XI, (4), *Gastrochaena*, p. 7, pl. IV, figs. 3, 4.
1903. *Gastrochaena macrochisma* Hidalgo, Estud. Prelim. Faun. Malacol. Filip., p. 11.
1925. *Gastrochaena macrochisma* Lamy, Journ. Conchyliol., LXVIII, p. 301.
1928. *Gastrochaena macrochisma* Faustino, Summary Philippine Mar. Freshw. Moll., p. 115.

The "Siboga" shells, which I assign to *R.* (*R.*) *macrochisma*, agree with the types of the species in the British Museum (Nat. Hist.), London.

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[1]) TRYON, G. W. — op. cit., p. 472 (1862).

The types in the British Museum are without any locality, but *R.* (*R.*) *macrochisma* has been recorded from the Philippines.

The "Siboga" specimens were collected at the Anchorage off Sawan, Siau Island (St. 125), Anchorage off Pasir, Pandjang, west coast off Binongka (St. 220), Nalahia Bay, Nusa Laut Island (St. 234) and Anchorage east of Dangar Besar, Saleh Bay (St. 313).

2. *Rocellaria* (*Spengleria*) *mytiloides* (Lamarck).

1711. *Rostrum Anatis tertium* Rumph, Amboin. Rarit., p. 10, pl. XLV, fig. P.
1818. *Gastrochaena mytiloides* Lamarck, Anim. sans Vertèb., V, p. 447.
1835. *Gastrochaena mytiloides* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 49.
1842. *Gastrochaena Mytiloides* Hanley, Rec. Biv. Shells, p. 10, pl. IX, fig. 37.
1856. *Rocellaria mytiloides* Adams, H. & A., Gen. Rec. Moll., II, p. 336.
1860. *Gastrochaena mytiloides* Reeve, Elem. Conch., II, p. 175.
1862. *Rocellaria* (*Spengleria*) *mytiloides* Tryon, Proc. Acad. Nat. Sci. Philadelphia, p. 484.
1862. *Gastrochaena mytiloides* Chenu, Man. Conchyliol., II, p. 16, fig. 72.
1863. *Gastrochaena Retzii* Deshayes, Cat. Moll. Réunion, p. 7, pl. XXVIII, figs. 1—3.
1878. *Gastrochaena Retzii* Sowerby in Reeve, Conch. Icon., XX, *Gastrochaena*, pl. II, fig. 6.
1880. *Gastrochaena* (*Spengleria*) *mytiloides* and *G.* (*S.*) *Retzii* von Martens, Möbius Beiträge Meeresf. Mauritius, Seychell., p. 332.
1886. *Gastrochaena Retzii* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 109.
1887. *Gastrochaena Retzii* and *G. mytiloides* Sowerby, Thes. Conch., V, p. 130, pl. CCCCLXX, fig. 10, p. 131, pl. CCCCLXX, fig. 8.
1890. *Gastrochaena mytiloides* and *G. Retzii* Paetel, Cat. Conch. Samm., III, p. 8.
1894. *Gastrochaena mytiloides* and *G. Retzii* Clessin in Martini-Chemn., Conch.-Cab. (N.F), XI (4), *Gastrochaenidae*, p. 6, pl. III, figs. 1, 2. p. 7, pl. III, figs. 15, 16.
1906. *Gastrochaena mytiloides* Melvill & Standen, Proc. Zool. Soc. London, p. 844.
1922. *Gastrochaena mytiloides* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXVIII, p. 310.
1923. *Gastrochaena mytiloides* Lamy, Bull. Mus. d'Hist. Nat. Paris, XXIX, p. 395.
1925. *Gastrochaena mytiloides* Lamy, Journ. Conchyliol., LXVIII, p. 312.
1928. *Gastrochaena mytiloides* Faustino, Summary Philippine Mar. Freshw. Moll., p. 116.
1929. *Gastrochaena* (*Spengleria*) *mytiloides* Dautzenberg, Faune Colon. Français., III, p. 619.

The largest shell of *R.* (*S.*) *mytiloides* in the "Siboga" collection is 30 mm. long and 14 mm. deep. The oblique furrow dividing the anterior from the posterior part of the shell is well developed, and the form and sculpture correspond exactly with that of a shell of this species in the British Museum collection.

Distribution: — *R.* (*S.*) *mytiloides* has been recorded from Mauritius, Jibouti, Madagascar and the Philippines.

In the "Siboga" collection the species is represented from the Bay of Nangamessi, Sumba (St. 53), Anchorage off Beo, Karakelang Islands (St. 131) and Anchorage north of Salomakiëe (Damar) Island (St. 144).

Family PHOLADIDAE.

Genus **Xylophaga** Turton.

1822. *Xylophaga* Turton, Conch. Insularum Brittan., p. 253.
1856. *Xylophaga* Adams, H. & A., Gen. Rec. Moll., II, p. 326.
1887. *Xylophaga* Fischer, P., Man. Conchyliol., p. 1135.

1898. *Xylophaga* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 821.
1903. *Xylophaga* Smith, Proc. Malacol. Soc. London, V, p. 328.
1925. *Xylophaga* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 195.
1926. *Xylophaga* Lamy, Journ. Conchyliol., LXIX, p. 98.

A detailed description of the genus *Xylophaga* is to be found in Lamy's work cited above. The genotype is *Xylophaga dorsalis* Turton.

1. *Xylophaga tomlini* sp. nov. (Plate VII, figs. 9, 10).

Xylophaga tomlini is closely allied to *X. praestans* Smith [1]), but the new species has a comparatively much smaller and thinner shell. The sculpture of its anterior triangular plate differs from that of *X. praestans* in the much larger number of closely situated, parallel, raised lines, the absence of the "lunule-like space", the more strongly developed keel and the much more incurved umbones. The protoplaxes or the dorsal accessory plates are missing. The internal rib is well developed, but is not so strong as in *X. praestans*. The shells are of a dirty yellowish-white colour.

Measurements of Holotype: — Length 16 mm., height 15 mm., diameter 14 mm.

Habitat: — A single shell of this new species was brought up in a deep-sea trawl at St. 88 (0° 34′.6 N, 118° 53′ E., 1301 metres).

Remarks: — Unfortunately the available material of this new species, which I have named after my friend Mr. J. R. le B. Tomlin, is very limited, but after a careful comparison with the other known species of the genus, I have no doubt that the "Siboga" shell belongs to an undescribed species.

Genus **Pholadidea** Goodall.

1819, *Pholadidea* Goodall in Turton, Conch. Dict., p. 147.

In the "Siboga" collection there is a single shell of the genus *Pholadidea*, which I cannot identify with any known species, but which owing to the unsatisfactory nature of the specimen I am not able to describe as a new species. This specimen was brought up in a trawl at St. 306 (8° 27′ S., 122° 54′.5 E., 247 metres).

Genus **Martesia** Blainville.

1825. *Martesia* Blainville, Man. Malacol., p. 632.
1856. *Martesia* Adams, H. & A., Gen. Rec. Moll., II, p. 330.
1887. *Martesia* Fischer, P., Man. Conchyliol., p. 1136.
1898. *Martesia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 819.
1925. *Martesia* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods, etc., p. 194.
1930. *Martesia* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 294.

Woodring's work may be consulted for a good definition of the genus *Martesia*, while Stewart has fully discussed the identity of the genotype *Martesia striata* (Linn.).

In the "Siboga" collection the genus *Martesia* is represented by a single left valve, which I have identified as *M. multistriata* (Sowerby).

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1) Smith, E. A. — Proc. Malacol. Soc. London, V, p. 328 (1903).

1. *Martesia multistriata* (Sowerby).

1849. *Pholas multistriata* Sowerby, Thes. Conch., II, p. 494.
1850. *Pholas multistriata* Sowerby, Proc. Zool. Soc. London (vol. for 1849), p. 162.
1851. *Martesia multistriata* Gray, Ann. Mag. Nat. Hist., (2) VIII, p. 383.
1858. *Martesia multistriata* Fischer, P., Journ. Conchyliol., VII, p. 52.
1860. *Pholas multistriata* Reeve, Elem. Conch., II, p. 171.
1863. *Martesia multistriata* Tryon, Proc. Acad. Nat. Sci. Philadelphia, p. 218.
1867. *Martesia multistriata* Tryon, Amer. Journ. Conch., III, p. 9.
1872. *Pholas multistriata* Sowerby, Conch. Icon., XVIII, *Pholas*, pl. IX, figs. 37*a*, *b*.
1889. *Martesia multistriata* Crosse & Fischer, P. Journ. Conchyliol. XXXVII, p. 294.
1890. *Martesia multistriata*? Paetel, Cat. Conch. Samm., III, p. 5.
1891. *Martesia multistriata* Fischer, P., Bull. Soc. Hist. Nat. d'Autun, IV, p. 244.
1893. *Martesia multistriata* Clessin in Martini-Chemn., Conch.-Cab. (N. F.), XI (4), *Pholadea*, p. 42, pl. VII, figs. 6, 7.
1909. *Pholas multistriata* Hedley, Austral. Ass. Adv. Sci., XII, p. 351.
1909. *Pholas* (*Martesia*) *multistriata* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 285.
1926. *Martesia multistriata* Lamy, Journ. Conchyliol., LXIX, p. 210.

A single left valve, which corresponds to Sowerby's description and figures of *M. multistriata* was collected by the "Siboga" Expedition at Macassar (St. 71).

Family Teredinidae.

Genus **Teredo** Linnaeus.

1758. *Teredo* Linnaeus, Syst. Nat., (ed. X), p. 651.
1927. *Teredo* Bartsch, Bull. U.S. Nat. Mus., C, (vol. 2), p. 538.

Through the kindness of Dr. B. Rensch of the Zoologisches Museum der Universität Berlin, I had the few specimens of *Teredo* collected by the "Siboga" Expedition examined by Dr. F. Moll, who has been making a special study of these boring molluscs. Later I compared these shells with Dr. Paul Bartsch's Philippine Collection in the United States National Museum at Washington. As unfortunately the pallets are not present with any of the specimens and the shells also are incomplete, it is not possible to be definite about their identification.

The three species in the collection are provisionally identified as follows: —

Stat. 122. — *Teredo chamberlaini* Bartsch [1]), 1 shell.
— *Teredo tanaonensis* Bartsch [2]), 1 shell.
Stat. 126. — *Teredo mindanensis* Bartsch [3]), 3 valves.

Family Laternulidae.

Genus **Laternula** Röding.

1798. *Laternula* Röding, Mus. Boltenianum, p. 155.
1811. *Auriscalpium* Megerle, Mag. Ges. Nat. Freunde Berlin, V (1), p. 46.
1818. *Anatina* Lamarck, Anim. sans Vertèb., V, p. 462.

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1) Bartsch, P. — loc. cit., p. 546, pl. LIV, figs. 1, 2 (1927).
2) Bartsch, P. — loc. cit., p. 543, pl. LIV, fig. 7 (1927).
3) Bartsch, P. — loc. cit., p. 539, pl. LIII, figs. 10, 12 (1927).

1845. *Anatina* Conrad, Amer. Journ. Conch., IV, p. 49.
1847. *Laternula* Gray, Proc. Zool. Soc. London, p. 190.
1856. *Anatina* Adams, H. & A., Gen. Rec. Moll., II, p. 360.
1863. *Anatina* Reeve, Conch. Icon. XIV, *Anatina* (Description of pl. I).
1903. *Laternula* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1530.
1906. *Laternula* Dall, Journ. Conch., XI, p. 296.

I see no reason why Gray's selection of Röding's generic name *Laternula* should not be adopted in place of the later name *Anatina* Lamarck. If this were not accepted, there is still the older name *Auriscalpium* of Megerle, for the two ordinarily cited publications (1809 and 1812) [1]) of Lamarck for the generic name *Anatina* had the names in vernacular, and these cannot be accepted.

No type of the genus *Laternula* was designated by Röding, but Gray suggested *L. anatina* (Linn.) as the Genotype.

1. *Laternula anatina* (Linn.).

1741. *Rostrum anatus* (sic) Rumph (ex parte), Amboin. Rariteit. p. 149, pl. XIV, fig. O.
1757. *Tellina subtilis albida* etc. D'Argenville, La Conchyliol. pp. 290, 293, pl. XXIII, fig. R.
1758. *Solen anatinus* Linnaeus, Syst. Nat. (ed. X), p. 673.
1764. *Solen anatinus* Linnaeus, Mus. Lud. Ulricae, p. 475.
1767. *Solen anatinus* Linnaeus, Syst. Nat. (ed. XII), p. 1115.
1782. *Solen anatinus* etc., Chemnitz, Conch.-Cab., VII, p. 62, pl. VI, figs. 46—48.
1788. *Solen anatinus* Schröter, Conch.-Cab. Namen Reg., p. 97.
1790. *Solen anatinus* Gmelin, Syst. Nat. (ed. XIII), p. 3225.
1793. *Mya anatina* Spengler, Nat. Hist. Selsk., III (2), p. 31.
1797. Bruguière, Encycloped. Méthod., pl. CCXXVIII, figs. 3*a*, *b*.
1798. *Laternula anatina* Röding, Mus. Boltenianum, p. 155.
1817. *Solen anatinus* Dillwyn, Descr. Cat. I, p. 65.
1817. *Auriscalpium anatinum* Schumacher, Ess. Nouv. Syst., p. 115, pl. III, figs. 3*a*, *b*.
1817. Savigny, Descr. Égypte, pl. VII, figs. 8, I—IV.
1818. *Anatina subrostrata* Lamarck, Anim. sans Vertèb., V, p. 463.
1824. *Anatina subrostrata* Blainville, Dict. Sci. Nat. XXXII, p. 347, pl. CVI, fig. 6.
1825. *Anatina subrostrata* Blainville, Man. Malacol., p. 564, pl. LXXVI, fig. 6.
1825. *Anatina subrostrata* Sowerby, Cat. Tankerville, p. 6.
1825. *Solen anatinus* Wood, Ind. Test., p. 15, pl. III, fig. 13.
1827. *Anatina subrostrata* Audouin, Explic. Pl. de Savigny in Descr. Égypte, p. 193.
1830. *Anatina subrostrata* Deshayes, Encycloped. Méthod., II, p. 40.
1835. *Anatina subrostrata* Deshayes in Lamarck, Anim. sans Vertèb., VI, p. 78.
1843. *Anatina subrostrata* Hanley, Rec. Biv. Shells, p. 20.
1844. *Anatina subrostrata* Potiez & Michaud, Gal. Douai, II, p. 252.
1845. *Anatina subrostrata* Catlow & Reeve, Conch. Nomencl., p. 8.
1847. *Anatina subrostrata* Gray, Proc. Zool. Soc. London, p. 190.
1850. *Anatina subrostrata* Deshayes in Cuvier, Règne Anim., pl. CVIII, figs. 1, 1*a*, *b*.
1853. *Anatina subrostrata* Mörch, Cat. Yoldi, II, p. 5.
1855. *Solen anatinus* Hanley, Ipsa Linn. Conch., p. 31.
1855. *Anatina subrostrata* Berge, Conchylienbuch, p. 37, pl. III, fig. 14.
1856. *Solen anatinus* Hanley in Wood, Ind. Test., p. 18, pl. III, fig. 14.
1856. *Anatina subrostrata* Adams, H. & A., Gen. Rec. Moll., II, p. 361.
1860. *Anatina subrostrata* Reeve, Elem. Conch., II, p. 152, pl. XLII, fig. 228.
1862. *Anatina subrostrata* Chenu, Man. Conchyliol., p. 37.

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1) The two publications are Philos. Zool. 2 vols. (Paris, 1809), and Extr. Cours. Zool. (Paris, 1812).

1863. *Anatina subrostrata* Reeve, Conch. Icon., XIV, *Anatina*, pl. I, fig. 6.
1865. *Anatina subrostrata* Vaillant, Journ. Conchyliol., XIII, p. 121.
1868. *Anatina anatina* Conrad, Amer. Journ. Conch., IV, p. 49.
1869. *Anatina subrostrata* Issel, Malacol. Mar. Rosso, pp. 151, 356.
1870. *Anatina subrostrata* MacAndrew, Ann. Mag. Nat. Hist., (4) VI, p. 445.
1874. *Anatina subrostrata* Lischke, Japan. Meeresconch., III, p. 101.
1885. *Anatina siphonata* Smith, "Challenger" Lamellibranchia, p. 76.
1886. *Anatina subrostrata* Cooke, Ann. Mag. Nat. Hist., (5) XVIII, p. 109.
1887. *Anatina subrostrata* Fischer, P., Man. Conchyliol., p. 1169, pl. XXIII, fig. 7.
1888. *Anatina subrostrata* Paetel, Cat. Conch. Samm., III, p. 22.
1890. *Anatina subrostrata* Vassel, Bull. Soc. Hist. Nat. d'Autun, III, pp. 46, 54.
1901. *Anatina subrostrata* Sturany, Denkschr. Kais. Akad. Wiss. Wien (Math.-Nat.), LXIX, p. 276.
1902. *Anatina subrostrata* Shopland, Proc. Malacol. Soc. London, V, p. 177.
1903. *Anatina subrostrata* Hidalgo, Obras Malacol., II, p. 39.
1905. *Anatina subrostrata* Hidalgo, Cat. Filip., p. 297.
1906. *Anatina subrostrata* Melvill & Standen, Proc. Zool. Soc. London, p. 845.
1909. *Anatina anatina* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 287.
1912. *Anatina subrostrata* Pallary, Mém. Inst. Egypt., VII, p. 185.
1913. *Anatina subrostrata* Woodward, B. B., Life of Mollusca, pl. XX, fig. 10.
1926. *Anatina subrostrata* Pallary, Mém. Inst. Egypt., p. 99, pl. XI, figs. 8, 1—4.

Hanley stated in "Ipsa Linnaei Conchylia" that Linnaeus did not possess a shell of the species he called *Solen anatinus*, but as he remarked there can be little doubt from the description in "Museum Ulricae" and the cited illustration that the shell in question is the same as was later given the name Anatina subrostrata by Lamarck. I have, therefore, no hesitation in following Lynge in adopting the Linnean specific name for this well known species. Cooke and later Lynge suggested that Reeve's species *A. eximia* and *A. flexuosa* are probably synonymous with the species under discussion. I have carefully examined the entire collection in the British Museum (Nat. Hist.), London, and am of opinion that of the species described by Reeve the following should be included in the synonymy of *L. anatina* (Linn.): — *A. Cumingii* (pl. I, fig. 1), *A. siphonata* (pl. I, fig. 2), *A. bullata* (pl. I, fig. 3), *A. flexuosa* (pl. I, fig. 5), *A. Blainvillei* (pl. III, fig. 17), *A. labiata* (pl. III, fig. 19), *A. amphora* (pl. IV, fig. 23) and *A. eximia* (pl. IV, fig. 30). In addition I found a tablet with three shells from the Island of Luzon bearing the manuscript name *A. hispidula* Valenciennes [1]; these shells are young specimens of *L. anatina*.

Distribution: — The species is widely distributed in the Red Sea and the Indo-Pacific Area.

The "Siboga" Expedition collected two young shells in Bay of Badjo, West Coast of Flores (St. 50) and St. 320 (6° 5′ S., 114° 7′ E.).

2. *Laternula rostrata* (Sowerby).

1818. *Anatina truncata* Lamarck (ex parte), Anim. sans Vertèb., V, p. 463.
1831. *Anatina truncata* Sowerby, Gen. Shells, I, pl. XXXV, fig. 1.
1842. *Anatina rostrata* Sowerby, Conch. Man., (ed. II), p. 317, fig. 69.
1863. *Anatina truncata* Reeve (non Lamarck), Conch. Icon., XIV, *Anatina*, pl. II, fig. 11.
1868. *Anatina truncata* (Reeve non Lamarck) Conrad, Amer. Journ. Conch., IV, p. 51.
1903. *Anatina rostrata* Hidalgo, Obras Malacol., II, p. 40.
1905. *Anatina rostrata* Hidalgo, Cat. Filip., p. 296.

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[1] Figured (pl. XII, figs. 3, 3*a*—*c*) with a short description on p. 565 of Griffith & Pidgeon (as *A. hispidula* of Cuvier), Animal Kingdom, Mollusca (1834).

As was pointed out by Deshayes [1]) Lamarck in 1818 confused under the name *A. truncata* two species, but the Pacific species was neither described nor given a name till Sowerby published a good figure of it under the name *A. rostrata* in 1842; Reeve however in "Conchologia Iconica" apparently in ignorance of Sowerby's work still described the species as *A. truncata* Lamarck. I have also no doubt that *A. marilina* [2]) (pl. II, fig. 10), *A. Boschasina* (pl. II, fig. 13), *A. limicola* (pl. III, fig. 27) and probably *A. Tasmanica* (pl. III, fig. 20) described by Reeve in his work cited above are also synonyms of Sowerby's *L. rostrata*. Further, as Reeve stated, it is the species for which Valenciennes had proposed the manuscript name *A. olorina* [3]). A good description of the species was published by Hidalgo.

Distribution: — *L. rostrata* has been recorded from the Philippines, while the species which I have suggested as its synonyms are from Australia, Tasmania and Japan.

The "Siboga" Expedition collected a single shell of this species from the Anchorage off Beo, Karakelang Islands (St. 130). The measurements of this specimen are: — Length 39.5 mm., height 19 mm., diameter 15 mm.

Family MYOCHAMIDAE.

Genus **Myadora** Gray.

1840. *Myadora* Gray, Ann. Mag. Nat. Hist., (3), IV, p. 306.
1840. *Myadora* Gray, Synop. Brit. Mus., p. 136.
1844. *Myadora* Reeve, Conch. Icon., II, *Myadora*, pl. I (explanation).
1847. *Myodora* Gray, Proc. Zool. Soc. London, p. 191.
1856. *Myodora* Adams, H. & A., Gen. Rec. Moll., II, p. 371.
1880. *Myodora* Smith, Proc. Zool. Soc. London, p. 579.
1887. *Myodora* Fischer, P., Man. Conchyliol., p. 1159.

In spite of Gray later altering the name *Myadora* to *Myodora* and Smith adopting the latter spelling, the correct name of the genus would be *Myadora*, as was originally published by the author.

For a detailed account of the genus reference may be made to Smith's paper cited above. The genotype is *Myadora brevis* (Sowerby).

1. *Myadora weberi* sp. nov. (Plate VII, figs. 11, 12).

The following is a description of this new species: — Species of moderate size; shell compressed, fairly thick, subtrigonal, obliquely truncated posteriorly, acutely rounded anteriorly; posterior dorsal slope very incurved, slightly shorter than almost straight anterior slope, ventral margin very regularly arcuate; lower deep valve very shallow, with a deep linear depression near the posterior dorsal margin, corresponding to a curved ridge on outer surface of valve; upper flat valve with a shallow depression about middle; sculpture of lower deep valve more impressed, consisting of concentric striae, with a few deeper grooves corresponding to regions of growth. Shell of a light yellowish colour, nacre pearly white.

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1) Deshayes, G. P., in Lamarck, Anim. sans Vertèb., VI, pp. 77, 78 (1835).
2) As Anatina maritima in the Index.
3) According to Hidalgo the specific name was *A. olar* (op. cit., p. 297).

Measurements of Holotype: — Length 15.2 mm., height 12 mm., diameter 3.3 mm.

Habitat: — A complete shell and a flat upper valve were brought up in a deep-sea trawl at St. 212 (5° 54′.5 S., 120° 19′.2 E., 462 metres).

Remarks: — *M. weberi* is closely allied to *M. quadrata* Smith[1]) from the Arabian Sea, but its shell is more elongate, the posterior dorsal slope and ventral margin are much more curved and the sculpture on the shells of the two species is quite different.

2. *Myadora* sp. (Plate VII, figs. 13, 14).

A single flat upper valve of a species of *Myadora* brought up in a deep-sea trawl at St. 256 (5° 26′.6 S., 132° 32′.5 E., 397 metres) probably represents an undescribed species, but with a single valve I do not feel disposed to describe the species.

The valve, which I figure, is comparatively deeper than that of *M. weberi* and has the sculpture more strongly developed; its posterior dorsal slope is not so incurved.

Family CALOPODIIDAE.

Genus **Calopodium** Röding.

1798. *Calopodium* Röding, Mus. Boltenianum, p. 166.
1799. *Pandora* Lamarck, Mem. Soc. Hist. Nat. Paris, p. 88.
1856. *Pandora* Adams, H. & A., Gen. Rec. Moll., II, p. 370.
1887. *Pandora* Fischer, P., Man. Conchyliol., p. 1158.
1903. *Pandora* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1515.

The generic name *Pandora* in strictly binomial sense was used by LAMARCK in 1799, and its earlier usage by HWASS in Chemnitz 1795 is not admissible. In 1798, however the name *Calopodium* was introduced by RÖDING and this has precedence over *Pandora* Lamarck; the family name must also be changed to Calopodiidae. The genotype is *Calopodium inaequivalvis* (Linn.).

In the "Siboga" collection there are representatives of two subgenera, *Coelodon* Carpenter[2]) — type *C.* (*C.*) *ceylanicus* (Sowerby) and *Kennerlia* Carpenter[3]) — type *C.* (*K.*) *filosus* Carpenter.

1. *Calopodium* (*Coelodon*) *elongatum* (Carpenter).

1864. *Coelodon elongatus* Carpenter, Proc. Zool. Soc. London, p. 600.
1868. *Coelodon elongatus* Carpenter, Amer. Journ. Conch., IV, p. 70.
1874. *Pandora elongata* Sowerby in Reeve, Conch. Icon., XIX, *Pandora*, pl. 1, fig. 4.
1885. *Coelodon elongatus* Smith, "Challenger" Lamellibranchia, p. 62.
1890. *Pandora elongata* Paetel, Cat. Conch. Samm., III, p. 29.
1906. *Coelodon elongatus* Hedley, Proc. Linn. Soc. N. S. Wales, XXXI, p. 473.
1909. *Coelodon elongatus* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7), V, p. 287.
1911. *Pandora elongata* Pelseneer, "Siboga" Lamellibranches (Anat.), p. 73, pl. XXIV, fig. 7.

The "Siboga" shells, which I assign to this species are more incurved along their dorsal line than some specimens of *C.* (*C.*) *elongatum* from Borneo coast in the British Museum. The anterior margin is also a little more oblique, and the shells are larger. The differences, however, are not sufficient to justify the separation of the "Siboga" specimens as a separate species or even a variety.

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[1]) SMITH, E. A. — Ann. Mag. Nat.-Hist., (7) IV, p. 250 (1899), and Illustr. Zool. "Investigator", fig. 5, 5*a* (1901).
[2]) CARPENTER, P. P. — Proc. Zool. Soc. London, p. 599 (1864).
[3]) id., ibid., p. 602 (1864).

Distribution: — *C.* (*C.*) *elongatum* has been recorded from the China Sea; near Borneo coast; Flinders Passage, North Australia and the Gulf of Siam.

The "Siboga" shells were dredged on the Bank between the islands of Bahuluwang and Tambolungan, south of Saleyer (St. 66), Banda Anchorage (St. 240) and Rumah Kuda Bay, Roma Island (St. 279).

2. *Calopodium* (*Kennerlia*) *carinatum* sp. nov. (Plate VII, figs. 15—18).

The following is a description of this new species: — Species of a small size; shell oblique, arched, thin; right valve almost flat, radially grooved, also bearing a few concentric lines of growth; left valve very convex; acuminate antero-dorsally, drawn out into almost a point, gradually curving down into greatly arched ventral margin, posterior margin subtruncate, dorsal margin almost straight, umbonal area slightly projecting above the hinge-line, a low ridge cutting off anterior dorsal area running down to ventral margin in front of umbo, and a very strongly marked posterior keel running to posterior margin; concentric sculpture consisting of low thread-like ridges. Shell of a horny colour.

Measurements of Holotype: — Length 7 mm., height 5.5 mm., diameter 2 mm.

Habitat: — Two shells of this interesting species were dredged at St. 159 (0° 59'.1 S., 129° 48'.8 E., 411 metres).

Remarks: — *C.* (*K.*) *carinatum* is allied to *C.* (*K.*) *radiatum* Sowerby [1]), but the shell is more oblique, less rostrate and more inflated, and the sculpture is less strongly developed.

Family VERTICORDIIDAE.

Genus **Verticordia** Sowerby.

1844. *Verticordia* Sowerby, Man. Conch., VII, p. 67, pl. DCXXXIX.
1860. *Verticordia* Seguenza, Journ. Conchyliol., VIII, p. 286.
1885. *Verticordia* Smith, "Challenger" Lamellibranchia, p. 165.
1887. *Verticordia* Fischer, P., Man. Conchyliol., p. 1160.
1903. *Verticordia* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1509.
1925. *Verticordia* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 91.

For a discussion of the genus *Verticordia* reference may be made to SMITH and DALL's works cited above, while a good description of the genus was recently published by WOODRING.

The genotype is *Verticordia cardiiformis* Sowerby, I am not certain about the subgeneric position of the new species *V. expansa*, and probably when more material is available it may have to be separated into a distinct subgenus.

1. *Verticordia* (*Verticordia*) *deshayesiana* P. Fischer.

1862. *Verticordia Deshayesiana* Fischer, P., Journ. Conchyliol., X, p. 35, pl. V, figs. 10. 11.
1862. *Verticordia Japonica* Adams, A., Ann. Mag. Nat. Hist., (3) IX, p. 224.

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[1]) See SOWERBY, G. B., in Reeve, Conch. Icon., XIX, *Pandora*, pl. II, fig. 9 (1874).

1878. *Verticordia Deshayesiana* Kobelt, Illustr. Conchylienbuch, p. 374, pl. C, fig. 22.
1885. *Verticordia deshayesiana* Smith (ex parte), "Challenger" Lamellibranchia, p. 167.
1887. *Verticordia Deshayesiana* Fischer, P., Man. Conchyliol., p. 1161.
1890. *Verticordia Deshayesiana* Paetel, Cat. Conch. Samm., III, p. 210.
1909. *Verticordia deshayesiana* Melvill, Trans. Linn. Soc. London (Zool.), XIII, p. 136.
1910. *Verticordia Deshayesiana* Hedley, Austral. Ass. Adv. Sci., XII, p. 349.

I agree with SMITH that *V. japonica* A. Adams is a synonym of *V.* (*V.*) *deshayesiana*, but I consider the specimens from Pernambuco, which he assigned to this species to be distinct.

The "Siboga" shells, which I refer to *V.* (*V.*) *deshayesiana* agree in all respects with FISCHER's description and figures, and also with some Japanese specimens of the species in the British Museum Collection.

Distribution: — *V.* (*V.*) *deshayesiana* appears to have a wide range in the Pacific Ocean.

In the "Siboga" collection the species is represented by dead valves dredged at St. 95 (5° 43'.5 N., 119° 40' E., 522 metres), west of Kwandang Bay Entrance (St. 116) and St. 159 (0° 59'.1 S., 129° 48'.8 E., 411 metres).

2. *Verticordia* (*Verticordia*) *crebrilirata* sp. nov. (Plate VII, figs. 19, 20).

The following is a description of this new species: — Shell small, cardiform, rather inflated, umbones strongly prosogyrate, curved forwards and downwards; lunule deeply impressed; anterior margin subtruncate, posterior slightly convex; surface sculpture consisting of 25—26 somewhat sharp, low, radial, transversely but feebly ridged ribs; ligament internal; right valve with a strong subumbonal tooth, inner edge of left valve in corresponding position thickened; ventral margin of valves slightly fluted. The shell is of a dirty white colour.

Measurements of Holotype: — Length 4.3 mm., height 4.6 mm., diameter 3.7 mm.

Locality: — The unique Holotype was dredged at St. 97 (5° 48'.7 N., 119° 49'.6 E., 564 metres).

Remarks: — *V.* (*V.*) *crebrilirata* is closely allied to *V.* (*V.*) *deshayesiana* P. Fischer, but is distinguished by the form of the shell, the much larger number of ridges and a generally different type of sculpture.

3. *Verticordia*? *expansa* sp. nov. (Plate VII, figs. 21, 22).

This new species of the genus *Verticordia* is very closely allied to *V. woodi* Smith[1]), but is larger than high, much less ventricose, with the preumbonal area much shorter, the umbones more acute, the posterior margin in the upper part more truncate, and the sculpture consisting of irregularly scattered but close set granules. The shell is of a yellowish brown colour, and the nacre is pearly white.

Measurements of Holotype: — Length 8 mm., height 7.8 mm., diameter 5 mm.

Locality: — The unique Holotype was brought up in a deep-sea trawl at St. 178 (2° 40' S., 128° 37'.5 E., 835 metres).

Remarks: — As noted above, *V. expansa* resembles *V. woodi* from off Pernambuco

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1) SMITH, E. A. — "Challenger" Lamellibranchia, p. 168, pl. XXV, fig. 7, 7*a*, *b* (1885).

Atlantic Ocean, but the shells of the two species can be very easily distinguished. The subgeneric position of these forms is far from clear.

Genus **Lyonsiella** M. Sars.

1869. *Lyonsiella* Sars, M., Vid. Selskab. Forhandl., p. 257.
1885. *Lyonsiella* Smith, "Challenger" Lamellibranchia, p. 73.
1887. *Lyonsiella* Fischer, P., Man. Conchyliol., p. 116.
1903. *Lyonsiella* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1510.

M. Sars only introduced the name in 1869, and it was not till 1872 [1]) that a description of the shell and animal was published by G. O. Sars from the notes left by M. Sars. In this latter work the author considered *Lyonsiella* to by only synonymous with *Pecchiolia* Meneghini, but I agree with Fischer and Smith that *Lyonsiella* is a good genus, quite distinct from *Pecchiolia*. The genotype is *Lyonsiella abyssicola* Sars, and a good definition of it is published by Fischer (loc. cit., p. 1162).

1. *Lyonsiella pilula* sp. nov. (Plate VII, figs. 23, 24).

Lyonsiella pilula is very closely allied to *L. papyracea* Smith [2]) from "Challenger" St. 157, about 1100 miles south-west of Australia. The shell of *L. pilula* is, however, very much smaller, thinner, almost transparent, globose, much more swollen and subequilateral. The umbones are more prominent and are turned inwards and forwards. The posterior dorsal margin is more oblique and the sculpture consists of about 30 hair-like, radial lines; no concentric sculpture can be distinguished on the surface of the valves.

Measurements of the Holotype: — Length 5.8 mm., height 6.2 mm., diameter 5.2 mm.

Habitat: — The unique Holotype was brought up in a deep-sea trawl at St. 88 (0° 34′.6 N., 119° 8′.5 E., 1301 metres).

2. *Lyonsiella smithi* sp. nov. (Plate VII, figs. 25, 26).

Lyonsiella smithi is closely allied to *L. jeffreysii* Smith [3]) from the mid-Atlantic but the shell of the new species is very much smaller, much thinner, less inflated and relatively more elongated. The posterior dorsal margin is much longer and more oblique, and forms the upper outline of the beak-like posterior part of the shell. The ventral margin is less arcuate, but behind the middle it curves up suddenly. The sculpture consists of a number of very regular, radial lines and only a few concentric striae; in addition the surface is finely granular.

Measurements of Holotype: — Length 9 mm., height 8.5 mm., diameter 6.6 mm.

Habitat: — The unique Holotype of the species was brought up in a deep-sea trawl at St. 178 (2° 40′ S., 128° 37′.5 E., 835 metres).

I have great pleasure in dedicating this new species to the memory of the late Mr. Edgar A. Smith, of the British Museum (Nat. Hist.). London to whom we owe the greater part of our information in reference to this interesting genus of bivalves.

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[1]) Sars, G. O. — Remarkable Forms of Animal Life, p. 25 (Christiana, 1872).

[2]) Smith, E. A. — "Challenger" Lamellibranchia, p. 73, pl. XXV, figs. 2, 2*a*, *b* (1885).

[3]) Smith, E. A. — "Challenger" Lamellibranchia, p. 73, pl. XXV, figs. 1, 1*a*, *b* (1885).

Order SEPTIBRANCHIA.

Family Poromyacidae.

Genus **Poromya** Forbes.

1844. *Poromya* Forbes, Rept. Moll. Aegean Sea, p. 143.
1846. *Embla* Lovén, Ind. Moll. Scand., p. 46.
1847. *Embla* Gray, Proc. Zool. Soc. London, p. 193.
1856. *Thetis* Adams, H. & A., Gen. Rec. Moll., II, p. 367.
1886. *Poromya* Dall, Bull. Mus. Comp. Zool. Harvard, XII, p. 280.
1887. *Poromya* Fischer, P., Man. Conchyliol., p. 1172.
1903. *Poromya* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1508.
1925. *Poromya* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 88.

For a good description of the genus *Poromya* reference may be made to Dall and Woodring. The genotype is *Poromya anatinoides* Forbes = *P. granulata* (Nyst).

In the "Siboga" collection the genus is represented by *Poromya s. s.*, and *Cetoconcha* Dall [1]) — type *Poromya* (*Cetoconcha*) *bulla* (Dall).

1. *Poromya* (*Poromya*) *pergranosa* sp. nov. (Plate VII, figs. 27, 28).

Poromya (*Poromya*) *pergranosa* is closely allied to *P.* (*P.*) *australis* Smith [2]) but the shell of the new species is comparatively longer, more elongate-ovoid, with the posterior margin distinctly truncate and ventral border less arcuate. The shell is less tumid, but the umbones are a trifle more prominent and there is a well marked radial ridge running from the umbones to the ventral border and separating a slightly concave posterior area of the valves. The sculpture is quite similar to that of *P.* (*P.*) *australis*. The shell is thicker and is of a light yellow ochre tint; the nacre is pearly white.

Measurements of Holotype: — Length 5.9 mm., height 5 mm., diameter 3.6 mm.

Habitat: — The unique Holotype was dredged at St. 154 (0° 7′.2 N., 130° 25′.5 E., 83 metres). A stray right valve dredged with the above is somewhat larger, but appears to belong to the same species.

2. *Poromya* (*Cetoconcha*) *gloriosa* sp. nov. (Plate VII, figs. 29, 30).

The following is a description of this new species: — Species of a moderate size; shell elongate ovate, subequilateral, inequivalve, rostrate, thin; moderately inflated, compressed in

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1) Dall, W. H. — Bull. Mus. Comp. Zool. Harvard, XII, p. 280 (1886).
2) Smith, E. A. — "Challenger" Lamellibranchia, p. 54, pl. XI, figs. 2, 2*a*, *b* (1885).

the rostral region; anterior margin broadly rounded, ventral margin slightly arcuate, posterior end subtruncate, anterior dorsal margin arcuate, posterior oblique; umbones full subcentral, prosogyrate; sculpture consisting of fine granules irregularly arranged all over except in umbonal area, a few low concentric threads also present near ventral margin of shell; hinge normal. Shell white, nacre slightly pearly.

Measurements of Holotype: — Length 17.5 mm., height 12.6 mm., diameter 10.7 mm.

Habitat: The unique Holotype of this new species was brought up in a trawl at St. 306 (8° 27′ S., 122° 54′.5 E., 247 metres).

Remarks: — The elongate-ovate, inflated and rostrate shell of *P.* (*C.*) *gloriosa* distinguish it from other known species of the genus.

3. *Poromya* (*Cetoconcha*) *eximia* sp. nov. (Plate VII, figs. 31, 32).

P. (*C.*) *eximia* is closely allied to *P.* (*C.*) *gloriosa* Prashad described above, but the shell of this species is very much deeper, much more inflated, the rostral part shorter and broader, umbones very full and prominent, ventral margin much more arcuate and the sculpture consisting of better developed granules and stronger concentric striae. The shell of this new species is thicker than that of *P.* (*C.*) *gloriosa* and is of a pale straw colour.

Measurements of Holotype: — Length 17.5 mm., height 15.4 mm., diameter 15.1 mm.

Habitat: — The unique Holotype was brought up in a trawl at St. 314 (7° 36′ S., 117° 30′.8 E., 694 metres).

4. *Poromya* (*Cetoconcha*) *butoni* sp. nov. (Plate VII, figs. 33, 34).

The following is a description of this new species: — Species of a small size; shell ovate, inequilateral, inequivalve, slightly rostrate, slightly convex; acuminately rounded in front, subtruncated behind, ventral margin arcuate, anterior dorsal margin shorter than posterior, regularly curved, posterior somewhat obliquely concave; umbones moderately prominent, full, situated in front of centre, curved backwards and inwards; sculpture consisting of minute elevated granules distributed regularly over entire surface except central part of shells. Shell of a pale straw colour, nacre pearly white.

Measurements of Holotype: — Length 7 mm., height 5.9 mm., diameter 4.8 mm.

Habitat: — The Holotype was dredged between the islands of Wowoni and Buton in the northern entrance of Buton Strait (St. 204). A shell from St. 102 (6° 4′.1 N., 120° 44′ E., 535 metres) also appears to belong to the same species.

Family CUSPIDARIIDAE.

Genus **Cuspidaria** Nardo.

1840. *Cuspidaria* Nardo, Rev. Zool., p. 30.
1847. *Neaera* Gray, Proc. Zool. Soc. London, p. 192.
1885. *Neaera* Smith, "Challenger" Lamellibranchia, p. 35.
1886. *Cuspidaria* Dall, Bull. Mus. Comp. Zool. Harvard, XII, p. 292.

1903. *Cuspidaria* Dall, Trans. Wagner Free Inst. Sci. Philadelphia, III, p. 1503.
1925. *Cuspidaria* Woodring, Miocene Mollusks from Bowden, Jamaica, Pelecypods etc., p. 90.
1930. *Cuspidaria* Stewart, Special Publication Acad. Nat. Sci. Philadelphia, N⁰ 3, p. 307.

For a discussion of the validity of the names *Neaera* and *Cuspidaria* reference may be made to STEWART, while the various groups or subgenera of *Cuspidaria* have been fully discussed by SMITH and later by DALL. The genotype is *Cuspidaria cuspidaria* (Olivi).

In the "Siboga" collection the subgenera represented are: — *Cuspidaria*, *s. s.*, *Cardiomya* Adams [1]) — type *Cuspidaria* (*Cardiomya*) *gouldiana* Hinds, *Rhinoclama* Dall & Smith [2]) — type *Cuspidaria* (*Rhinoclama*) *philippinensis* (A. Adams) and *Pseudoneaera* Sturany [3]) — type *Cuspidaria* (*Pseudoneaera*) *thaumasia* (Sturany).

1. *Cuspidaria* (*Cuspidaria*) *macrorhynchus* Smith. (Plate IX, fig. 17).

1895. *Cuspidaria macrorhynchus* Smith, Ann. Mag. Nat. Hist., (6), XVI, p. 12, pl. II, figs. 5, 5*a*.
1897. *Cuspidaria macrorhynchus* Smith, Illustr. Zool. "Investigator", Moll., pl. III, figs. 5, 5*a*.

Cuspidaria (*Cuspidaria*) *macrorhynchus* is, as SMITH remarked, allied to *C. wollastonii* Smith, but the shell of the latter is slightly more oblique, and the shorter rostrum is bisected by a sharp keel.

The "Siboga" shells agree in general form with the types of the species from the Arabian Sea, but vary in reference to the length of rostrum. I figure two shells.

Distribution: — The types of the species were collected at "Investigator" St. 177, off the west coast of India.

The "Siboga" shells were brought up in trawls at St. 102 (6° 4′.1 N., 120° 44′ E., 535 metres) and St. 300 (10° 48′.6 S., 123° 23′.1 E., 918 metres).

2. *Cuspidaria* (*Cuspidaria*) *mitis* sp. nov. (Plate VII, fig. 35).

Cuspidaria (*Cuspidaria*) *mitis* is closely allied to *C.* (*C.*) *macrorhynchus* Smith, but the new species has a much larger, more inflated and very globose shell. The umbones are more tumid and project a great deal above the hinge-line. The rostrum is just about as long, but is comparatively broader and the radiating ridge running from the umbones to the ventro-posterior angle of the margin is better developed. The sculpture consists of almost regular, concentric, thread-like striae, which on the rostrum curve up from the radial ridge, and form coarser rugae. The shells are of a straw colour.

Measurements of Holotype: — Length including rostrum 24.4 mm., height 12.9 mm., diameter 10.6 mm., length of rostrum 11.4 mm., height of rostrum 4 mm.

Habitat: — The Holotype and paratypes of this new species were brought up in a deep-sea trawl at St. 18 (7° 28′.2 S., 115° 24′.6 E., 1018 metres). A single right valve was also found at St. 17 (7° 28′.5 S., 115° 28′ E., 1060 metres).

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[1]) ADAMS, A. — Ann. Mag. Nat. Hist., (3) XIII, p. 208 (1864).

[2]) DALL, W. H. & SMITH, E. A. in Dall, Bull. Mus. Comp. Zool. Harvard, XII, p. 300 (1886). With the authors of the subgenus, I have given *C.* (*R.*) *Philippinensis* (A. Adams) as its type, but this species has never been described, and I have not seen any specimens of it. *Rhinomya* A. Adams is a synonym of *Rhinoclama*.

[3]) STURANY, R. — Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 265 (1901).

3. *Cuspidaria* (*Cuspidaria*) *convexa* sp. nov. (Plate VII, figs. 36, 37).

Cuspidaria (*Cuspidaria*) *convexa* is closely allied to *C.* (*C.*) *mitis* described above, but its shell is more oblique and the anterior dorsal margin of the valves, which is very short, is hardly differentiated from the anterior margin. The valves are more tumid and the umbones, which are greatly inflated, are curved inwards and backwards. The rostrum is deeper but comparatively shorter and less convex, and the rostral ridge is not so raised. The sculpture is coarser and not so regular as in *C.* (*C.*) *mitis*.

Measurements of Holotype: — Length 16 mm., height 10.8 mm., diameter 10 mm., length of rostrum 5.8 mm., depth of rostrum 4 mm.

Habitat: — The unique Holotype was brought up in a trawl at St. 314 (7° 36′ S., 117° 30′.8 E., 694 metres).

4. *Cuspidaria* (*Cuspidaria*) *gigantea* sp. nov. (Plate VII, fig. 38).

The following description of *C.* (*C.*) *gigantea* — probably the largest known species of the genus — is unfortunately based on a single, dead, right valve only: — Species of a large size; shell oblique, ovate-rostrate, inequilateral, moderately convex, thick, solid; slightly rounded in front, with a long comparatively narrow rostrum behind; umbones only slightly elevated, somewhat tumid, situated much behind middle of shell; anterior dorsal margin greatly arched, posterior dorsal short, not very concave, ventral margin very convex, marked off from ventral border of rostrum by a broad depressed area; rostrum almost half the entire length of shell, narrow, tubular, concave above, curved outwards and downwards; rostral ridge distinctly marked, not very sharp; sculpture consisting of very regular, minute thread-like concentric striae; these become irregular on the rostrum. A single elongate posterior lateral tooth; fossette deep, posteriorly inclined and attached to hinge-margin by its posterior edge. Shell of a dirty gray colour.

Measurements of Holotype: — Length 52 mm., height 26.8 mm., diameter of single valve 8.7 mm., length of rostrum 25.5 mm., depth of rostrum 5 mm.

Habitat: — A single right valve, the Holotype of the species, was dredged at St. 159 (0° 59′.1 S., 129° 48′.8 E., 411 metres).

Remarks: — The large oblique, ovate shell with a beautiful concentric sculpture and an elongate, tubular, curved rostrum distinguish *C. gigantea* from all other species of the genus *Cuspidaria*.

5. *Cuspidaria* (*Cuspidaria*) *corrugata* sp. nov. (Plate VII, fig. 39).

The following is a description of this new species: — Species of a moderate size, shell inequilateral, ovate, thick; rounded in front, shortly rostrate behind; umbones acute, depressed; anterior dorsal margin convex, posterior dorsal strongly incurved, concave; ventral margin arcuate, curving up suddenly from about middle; rostrum short, marked off by an oblique depression with well developed oblique ridge; surface obliquely ridged, ridges low, narrow, rather distantly separated, more regularly concentric anteriorly; sinuous and running into one another near the rostrum, rostrum coarsely rugose; hinge as in typical *Cuspidaria*. Shell of a whitish colour, nacre shining white.

Measurements (in millimetres).

	Right valve	Left valve
Length.	21.6	19.8
Height	12.8	11.5
Diameter.	5	4.6
Length of rostrum	5.3	4.3
Depth of rostrum	4	3.8

Habitat: — Two valves, a right and a left, on which the above description is based, were dredged in the Bay of Bima (St. 47). I also refer to this species a young right valve dredged at St. 105 (6° 8′ N., 121° 19′ E., 275 metres) and at Anchorage south coast of Timor (St. 285).

Remarks: — C. (C.) *corrugata* is allied to C. (C.) *chinensis* (Griffith & Pidgeon)[1]), but the shell is not so rostrate, the umbones are less prominent and the sculpture is much less developed and less regular.

6. *Cuspidaria* (*Cuspidaria*) *tomlini* sp. nov. (Plate VII, figs. 40, 41).

The following is a description of this new species: — Species of a medium size; shell ovoid, subequilateral, tumid, thick; rounded in front, rostrate behind; umbones acute, not very prominent; anterior dorsal margin convex, posterior dorsal concave, ventral margin arcuate, curving up regularly behind middle to form ventral margin of rostrum; rostrum about one third total length of shell, shallow oblique depression marking off rostrum from main part of shell, with strongly developed oblique ridge from umbo to lower angle of its edge, a second less marked ridge from umbo to dorsal angle also present; sculpture consisting of regular, concentric, thread-like raised striae separated by broad interspaces, on rostrum below oblique ridge striae compressed and irregular, above ridge appearing as low, closely placed transverse striae. Shell of a light yellowish brown colour, nacre dull white.

Measurements of Holotype: — Length 9 mm., height 5.5 mm., diameter 4.5 mm., length of rostrum 3.2 mm., depth of rostrum 1.8 mm.

Habitat: — Two shells of this species, which I associate with the name of my friend Mr J. R. Le B. Tomlin were dredged at St. 105 (6° 8′ N., 121° 19′ E., 275 metres).

Remarks: — C. (C.) *tomlini* is closely allied to C. (C.) *hindsiana* A. Adams[2]), but C. (C.) *tomlini* has a much smaller and more tumid shell, the rostrum is comparatively longer and bears two ridges; the concentric striae of C. (C.) *tomlini* are more regular and better developed.

7. *Cuspidaria* (*Cuspidaria*) *solidula* sp. nov. (Plate VII, figs. 42, 43).

Cuspidaria (*Cuspidaria*) *solidula* is closely allied to C. (C.) *tomlini* described above, but the shell is more trigonal, deeper and more inflated; there is a shorter rostrum separated off by a more concave oblique depression; the umbones are more full and the sculpture consists of very regular, closely placed concentric threads over the main part of the shell and the depressed lower part of the rostrum; above the ridge the threads are almost transverse.

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1) Griffith, E. & Pidgeon, E. — Kingdom, Animal Mollusca, p. 598, pl. XXII, fig. 5 (1834).

2) Adams, A. — Ann. Mag. Nat. Hist., (3) XIII, p. 207 (1864).

Measurements of Holotype: — Length 8 mm., height 5.9 mm., diameter 4.5 mm., length of rostrum 2.2 mm., depth of rostrum 2 mm.

Habitat: — The unique Holotye of *C.* (*C.*) *solidula* was dredged at St. 95 (5° 43′.4 N., 119° 40′ E., 522 metres).

8. *Cuspidaria* (*Cardiomya*) *gouldiana* (Hinds).

1843. *Neaera Gouldiana* Hinds, Proc. Zool. Soc. London, p. 77.
1844. *Neaera Gouldiana* Hinds, Ann. Mag. Nat. Hist., (1) XIII, p. 308.
1844. *Neaera Gouldiana* Hinds, Zool. Voy. "Sulphur", p. 70, pl. XX, fig. 17.
1845. *Neaera Gouldiana* Catlow & Reeve, Conch. Nomencl., p. 10.
1856. *Neaera Gouldiana* Adams, H. & A., Gen. Rec. Moll., II, p. 369.
1860. *Neaera Gouldiana* Reeve, Elem. Conch., II. p. 155.
1862. *Neaera Gouldiana* Chenu, Man. Conchyliol., II, p. 50, fig. 208.
1864. *Cardiomya Gouldiana* Adams, A., Ann. Mag. Nat. Hist., (3) XIII, p. 208.
1868. *Neaera* (*Cardiomya*) *Gouldiana* Conrad, Amer. Journ. Conch., IV, p. 58.
1868. *Neaera* (*Cardiomya*) *Gouldiana* Adams, A., Ann. Mag. Nat. Hist., (4) II, p. 367.
1878. *Neaera Gouldiana* Kobelt, Illustr. Conchylienbuch, p. 322, pl. XCIII, fig. 7.
1882. *Neaera* (*Cardiomya*) *gouldina* (sic), Dunker, Ind. Moll. Mar. Japon., p. 180.
1884. *Neaera* (*Cardiomya*) *Gouldiana* Tryon, Struct. Syst. Conch., III, p. 141.
1884. *Neaera Gouldiana* Græsset, Ind. Test. Viv., p. 245.
1885. *Neaera Gouldiana* Smith, "Challenger" Lamellibranchia, p. 36.
1887. *Cuspidaria* (*Cardiomya*) *Gouldiana*, Fischer, P., Man. Conchyliol., p. 1155.
1890. *Neaera Gouldiana* Paetel, Cat. Conch. Samm., III, p. 27.
1903. *Neaera Gouldiana* Hidalgo, Obras Malacol., II, p. 43.
1905. *Neaera Gouldiana* Hidalgo, Cat. Filip., p. 297.
1906. *Cuspidaria Gouldiana* Owston, Japan. Loochooan Shells, p. 41.
1928. *Cuspidaria gouldiana* Faustino, Summary Philippine Mar. Freshw. Moll., p. 45.

C. (*C.*) *gouldiana* is closely allied to *C.* (*C.*) *singaporensis* (Hinds) and *N.* (*C.*) *pulchella* (H. Adams), but the shell of this species is much thinner and the ridges finer and not so broad as in the other two species.

Distribution: — *C.* (*C.*) *gouldiana* is confined to the Pacific Ocean.

In the "Siboga" collection the species is represented from St. 306 (8° 27′ S., 122° 54′.5 E., 247 metres).

9. *Cuspidaria* (*Cardiomya*) *sibogai* sp. nov. (Plate IX, figs. 18, 19).

C. (*C.*) *sibogai* belongs to the *gouldiana*-group of species of the subgenus *Cardiomya*, but the shell of this new species is very large, very tumid, globose, and the narrow tubular rostrum is about half the length of the shell. The sculpture consists of very fine and regular concentric striae and about 35 compressed, raised, hollow ridges running from the umbones downwards and outwards. The concentric striae are continued as parallel striae on the rostrum, somewhat curved, but a few of them turn upwards next to the oblique ridge and form transverse rugae. The shell is of a straw colour, the nacre being dull white.

Measurements of Holotype: — Length 25.6 mm., height 12.7 mm., diameter 10.8 mm.

Habitat: — The unique Holotype of this beautiful species was brought up in a deep-sea trawl at St. 48 (8° 4′.7 S., 118° 44′.3 E., 2060 metres). Unfortunately the left valve is damaged.

10. *Cuspidaria* (*Cardiomya*) *singaporensis* (Hinds).

1843. *Neaera Singaporensis* Hinds, Proc. Zool. Soc. London, p. 77.
1844. *Neaera Singaporensis* Hinds, Ann. Mag. Nat. Hist., (1) XIII, p. 308.
1845. *Neaera Singaporensis* Catlow & Reeve, Conch. Nomencl., p. 11.
1856. *Neaera Singaporensis* Adams, H. & A., Gen. Rec. Moll., II, p. 369.
1860. *Neaera Singaporensis* Reeve, Elem. Conch., II, p. 155.
1876. *Neaera singaporensis* Tapparone-Canefri, Viag. "Magenta", p. 224.
1885. *Neaera singaporensis* Smith, "Challenger" Lamellibranchia, p. 36.
1890. *Neaera Singaporensis* Paetel, Cat. Conch. Samm., III, p. 28.
1909. *Neaera Singaporensis* Lynge, D. Kgl. Dansk. Vidensk. Selsk. Skr. Nat.-Math., (7) V, p. 288, textfig. p. 289.

The hollow radial ridges of *C.* (*C.*) *singaporensis* are broader than those of *C.* (*C.*) *gouldiana*, and the rostral ridges are better developed. The umbones are more tumid, and are curved inwards and backwards.

Distribution: — *C.* (*C.*) *singaporensis* was described from Singapore and has also been recorded from the Gulf of Siam.

In the "Siboga" collection there are stray valves of this species from the Madura Strait (St. 2).

11. *Cuspidaria* (*Cardiomya*) *persculpta* sp. nov. (Plate VII, fig. 44).

Cuspidaria (*Cardiomya*) *persculpta* is very closely allied to *C.* (*C.*) *alcocki* Smith described from the Bay of Bengal[1]). The main distinguishing features of the new species are the less globose shell, the narrower and more oblique rostrum and the sculpture consisting of 3 main and a number of accessory radial keels on the posterior half of the shell. There are in addition a large number of feebly developed keels on the anterior half of the shell. In this new species, further, the concentric ridges are better developed, and as a result all the radial keels are feebly serrated.

Measurements of Holotype: — Length 10 mm., height 6.5 mm., diameter 4.3 mm.

Habitat: — The Holotype and two paratypes of this, species were brougth up in a deep-sea trawl at St. 52 (9° 3′.4 S., 119° 56′.7 E., 959 metres).

12. *Cuspidaria* (*Cardiomya*) *multicarinata* sp. nov. (Plate VII, figs. 45, 46).

C. (*C.*) *multicarinata* is closely allied to *C.* (*C.*) *persculpta* and *C.* (*C.*) *alcocki* Smith, but is easily distinguished by its smaller and more globose shell, and its very short rostrum. There are 3 main hollow and several radial ridges on the posterior half of the shell and on the rostrum. In addition there are a large number of radial ridges on the anterior half of the shell, but these are not so raised as those of *C.* (*C.*) *persculpta*; the concentric sculpture is also not so strongly developed. The shell is thicker and more solid than that of either *C.* (*C.*) *alcocki* or *C.* (*C.*) *persculpta*.

Measurements of Holotype: — Length 8.4 mm., height 5.9 mm., diameter 4.5 mm.

Habitat: — The unique Holotype was dredged at St. 90 (1° 17′.5 N., 118° 53′ E., 281 metres).

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[1]) Smith, E. A. — Ann. Mag. Nat. Hist., (6) XIV, p. 170, pl. V, fig. 8 (1894) and Illustr. Zool. "Investigator", Moll. pl. III, fig. 6 (1897).

13. *Cuspidaria* (*Cardiomya*) *semicostata* sp. nov. (Plate VII, figs. 47, 48).

The following is a description of this new species: — Species of a small size; shell subglobose, greatly inflated, shortly rostrate, thin; subtruncate in front, round posteriorly with a short triangular rostrum behind; umbones inflated, rounded, curved inwards and forwards, approximating in middle, slightly raised above hinge-line; anterior and posterior dorsal margins straight, ventral border only slightly arcuate; sculpture consisting of very regular, close-set, rounded, microscopic, concentric striae and 3 main strongly developed hollow radial ribs on posterior third of shell; alternating with these are 3—4 less developed radial ribs and 6—7 moderately strong radial ribs on rostrum. Shell of a dull milk white colour.

Measurements of Holotype: — Length 10.2 mm., height 8.4 mm., diameter (single left valve) 3.8 mm.

Habitat: — Two complete left and a damaged right valve of this species were brought up in a trawl at St. 159 (0° 59′.1 S., 129° 48′.8 E., 411 metres).

Remarks: — *C.* (*C.*) *semicostata* is allied to *C.* (*C.*) *forticostata* Sowerby[1]) from Cape Natal, but the short triangular rostrum and the radial sculpture confined to the rostrum and posterior third of the shell of the former distinguish it at once from the African species.

14. *Cuspidaria* (*Rhinoclama*) *dubia* sp. nov. (Plate VII, figs. 49, 50).

The following is a description of this new species: — Species of a small size, shell elongately pyriform, inequilateral, moderately inflated, thin; rounded in front, acuminated and shortly rostrate behind; umbones rather depressed, situated in front of middle of shell, smooth; anterior dorsal margin slightly convex, posterior dorsal somewhat concave; ventral margin arcuate, somewhat sinuated posteriorly to form the ventral margin of narrow rostrum; rostrum short, compressed, truncated, with well developed ridge running from umbones to its lower angle; sculpture consisting of regular concentric thread-like raised striae separated by broad interspaces; left valve edentulous, right with anterior and posterior laterals, posterior better developed, no fossette, resilium inserted under umbones. Shell of a light straw colour, nacre whitish.

Measurements of Holotype: — Length 7.5 mm., height 4.8 mm., diameter 3.4 mm.

Habitat: — The Holotype and a few stray valves of this new species were brought up in deep-sea trawls at St. 211 (5° 40′.7 S., 120° 45′. E., 1158 metres) and St. 221 (6° 24′ S., 124° 39′ E., 2798 metres).

Remarks: — *C.* (*R.*) *dubia* appears to be allied to *C.* (*R.*) *rugata*[2]) A. Adams, but the form of the shell and the sculpture of the two species are different.

15. *Cuspidaria* (*Pseudoneaera*) *thaumasia* Sturany.

1901. *Pseudoneaera thaumasia* Sturany, Denkschr. Kais. Akad. Wiss. Wien, Math.-Nat., LXIX, p. 265, pl. XI, figs. 11—16.

A single shell with the right valve damaged from "Siboga" St. 306 agrees so closely

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1) Sowerby, G. B. — Mar. Investigations in S. Africa, IV, p. 18, pl. VII, fig. 15 (1904).

2) Adams, A. — Ann. Mag. Nat. Hist., (3) XIII, p. 208 (1864).

with the description and figures of *C.* (*P.*) *thaumasia* Sturany from the Red Sea, that I have no hesitation in identifying it with this species.

The shell is subtrigonal, moderately inflated shortly rostrate posteriorly and is covered with regular, close, concentric, low ridges. The hinge of the left valve agrees with STURANY's description, while the hinge area of the right valve is broken.

The "Siboga" shell was, as noted above, brought up in a trawl at St. 306 (8° 27′ S., 122° 54′.5 E., 247 metres).

Genus **Myonera** Dall & Smith.

1886. *Myonera* Dall & Smith in Dall, Bull. Mus. Comp. Zool. Harvard, XII, p. 302.
1903. *Myonera* Dall, Trans. Wagner Free Inst. Philadelphia, III, p. 1505.

With DALL I consider *Myonera* to be a genus of equal rank to *Cuspidaria* Nardo. The genotype of *Myonera* is *Myonera paucistriata* (Dall).

1. *Myonera dautzenbergi* sp. nov. (Plate VII, fig. 51).

The following is a description of this new species: — Species of moderate size; shell inequilateral, trigonal, shortly but broadly rostrate posteriorly, thin, greatly inflated; rounded in front, umbones prominent, incurved, almost meeting in middle line; anterior dorsal margin sloping, almost straight; posterior dorsal with upper margin of rostrum slightly concave, ventral slightly arcuate; rostrum short, deep, subtruncated posteriorly, without rostral ridges; surface sculpture consisting of regular, low, concentric almost microscopic striae, anteriorly some of the striae more raised and appearing as strong ridges; hinge edentulous, fossette posteriorly dissected. Shell of milk white colour.

Measurements of Holotype: — Length 15 mm., height 11.5 mm., diameter 8.8 mm.

Habitat: — The Holotype and two stray valves of this interesting species were brought up in a deep-sea trawl at St. 52 (9° 3°.4 S., 119° 56′.7 E., 959 metres).

ERRATA.

Page 37. Line 6. In place of *Bolten* read *Röding*.
Line 7. In place of *Bose,* read *Bosc.*
Line 20. In place of *Akad* read *Acad.*
Line 27. is to be deleted.
Page 44. Line 18. In place of LV read LI, and instead of p. 66 p. 139.
Page 51. Line 20. In place of *iridina* read *irudina.*
Line 36. In place of *keep* read *keel.*
Page 54. Line 29. In place of *p. 95* read *p. 53.*
Page 61. Line 38. Delete *Schwarzgefleckte Gogelhöflein* and *p. 20.*
Page 62. Line 40. In place of *is that its* read *are that its.*
Page 64. Line 16. In place of *igamental* read *ligamental.*
Page 67. Line 38. In place of *snbramosa* read *subramosa.*
Page 69. Line 23. In place of *Comingii* read *Cumingii.*
Page 83. Line 35. In place of *isognomum* read *isogonum.*
Page 91. Line 36. In place of *Pterea* read *Pteria.*
Page 94. Line 10. In place of *to* read *by.*
Page 97. Line 34. In place of *Margaritophora* read *Margaritiphora.*
Page 109. Line 22. In place of *Gaedaropus* read *gaederopus.*
Page 111. Line 39. In place of *gaedaropus* read *gaederopus.*
Page 115. Line 12. In place of *Steward* read *Stewart.*
Page 120. Line 12. In place of *Bolten* read *Röding.*
Page 169. Line 40. In place of *Caleomma* read *Galeomma.*
Page 174. Line 1. In place of *corbicula* read *Corbicula.*
Page 185. Line 40. In place of *Penonaeoderma* read *Peronaeoderma.*
Page 188. Line 34. Insert the sign? before A. in brackets.
Page 289. Line 36. In place of *D. donaciforme* read *C. donaciforme.*
Page 311. Line 15. In place of *Solenocurtus* read *Solecurtus.*
Page 313. Line 44. In place of *magnus* read *maximus.*

INDEX OF GENERA AND SPECIES.

An asterisk (*) placed before a name indicates a new genus, species or variety. The names of genera are printed in full capitals, while the synonyms are printed in italics. References to genera and species enumerated in the Introduction (pp. 1—12) are not included in this Index.

abbreviatus, Solecartus, 311.
abbreviatus, Solen, 311.
ABRA, 199.
abyssicola, Limopsis, 60.
abyssicola, Lyonsiella, 325.
Acar, 41,49.
Acesta, 119.
achaeus, Anomia (Anomia), 29.
Acila, 13.
aculeata, Arca, 37.
aculeata, Cardita, 148.
aculeatus, Spondylus, 110.
acuminata, Arca, 32.
acuminata, Leda, 20.
acuminata, Laeda, 20.
Adamsii, Cardium, 276.
Adamsii, Hemicardia (Ctenocardia), 276.
adamsi, Kellia, 167.
adusta, Pinna, 135.
aegrota, Venus, 249.
aequilatera, Pinna, 134.
aequistriata, Tellina, 196.
aerata, Avicula, 99.
aerata, Avicula (Meleagrina), 100.
affinis, Callista, 222.
affinis, Caryatis, 222.
affinis, Cytherea, 222.
affinis, Lioconcha, 222.
affinis, Meretrix (Caryatis), 222.
affinis, Meretrix (Pitar), 222.
affinis, Pitar, 222.
affinis, Venus, 222.
affinis, Venus (Caryatis), 222.
afra, var. *solida, Arca (Fossularca),* 54.
africana, Dosinia, 243.
Ala-corvi, Avicula, 96.
ala-corvi, Electroma, 96.
ala-corvi, Mytilus, 96.
ala-corvi, Pteria, 96.
ala-corvi, Pteria (Electroma), 96.
ala papilionis, Paphia, 233.
ala papilionis, Paphia (Paphia), 233.
alba, Pinna, 138.
albicans, Tellina (Peronidia), 178.
albida, Circe, 224.
albida, Chama, 212.
albina, Avicula, 99.
albina, Avicula (Meleagrina), 100.
albina, Meleagrina, 99.
album, Fragum, 274, 286.
albus, Malleus, 104.
albus, Tudes, 104.
alcocki, Cuspidaria (Cardiomya), 332.
Alectryonia, 129.
allus, Pectunculus, 35.
ALOIDIS, 307.
alta, Anaitis, 259.
alta, Chione, 259.
alta, Chione (Circomphalus), 259.
alta, Venus, 259.
ambigua, Galeomma, 169, 170.
ambigua, Scintilla, 169.
amboinense, Cardium, 61.
amboinensis, Glycymeris, 61.
amboinensis, Pectunculus, 62.
amboinicum, Ostreum, 30.
amethystea, Tellina, 303.
amethystina, Gari, 304.
amethystus, Gari (Gobraeus), 303.
amethystus, Psammobia, 300.
amethystus, Psammotaea, 304.
Amethystus, Solen, 303.
Amphidesmoides, Artemis, 245.
amphidesmoides, Dosinia (Austrodosinia), 245.
Amphiodesma, 198.
amphora, Anatina, 320.
Amygdala, 233.
Amygdalum, 71.
anaclima, Arca (Bathyarca), 56.
Anadara, 35.
Anatina, 318.
anatina, Anatina, 320.
anatina, Laternula, 319.
anatina, Mya, 319
anatinum, Auriscalpium, 319.
anatinus, Laternula, 319.
Anaitis, 252.
anatinoides, Poromya, 326.
anatus, Rostrum, 319.
andamanensis, Novaculina, 311.
angusta, Galeommea, 167.
angulata, Lima, 125.
angulata, Lima (Mantellum), 125.
angulata, Gafrarium, 231.
angulata, Lima, 126.
angulatus, Pectunculus, 64.
angulifera, Divaricella, 160.
angulifera, Divaricella, 160.
angulifera, Lucina (Divaricella), 160.
Angulus, 178, 195.
angustana, Pinna, 133.
annulata, Lima, 122.
annulata, Lima (Lima), 122.
Anodontina, 153.
anomala, Mysella, 171.
anomala, Tellina, 305.
ANOMALOCARDIA, 260.

Anomalocardia, 35.
Anomalodiscus, 260.
ANOMIA, 29.
Anomioides, *Avicula*, 100.
anomioides, Isognomon; 86.
anomioides, *Isognomon* (*Perna*), 86.
anomioides, *Melina*, 86.
anomioides, *Margaritifera*, 100.
anomioides, *Pedalion*, 86.
anomioides, *Perna*, 86.
anomioides, Pinctada, 100.
ANTIGONA, 246.
antiquata, *Anadara*, 36.
antiquata, Arca (Anadara), 35.
antiquata, *Arca* (*Anomalocardia*) 35.
antiquata, var. hankeyana, Arca (Anadara), 36.
antiquata, *Arca*, 38.
antiquata, Cardita, 142.
antiquata, *Mactra* (*Mactra*), 209.
antiquatus, Taras, 164.
anus, Dosinia (Austrodosinia), 243.
apertum, Cardium (Papyridea), 282.
*approximans, Nuculana (Nuculana), 21.
aquatilis, Pteria, 95.
aquila, *Perna*, 83.
arabica, *Arca*, 32.
arafurensis, Macoma (Psammacoma), 197.
arafurensis, *Tellina* (*Macoma*), 197.
arata, *Modiola*, 73.
arata, Modiolus (Modiolus), 72.
arausiana, *Tellina*, 190.
ARCA, 31.
Arca (Bathyarca), sp., 55, 56.
Arca, sp., 38.
Arcinella, 143.
Arcopagia, 178, 195.
Arcoperna, 81.
arctica, Saxicava, 314.
arctica, Yoldia, 24.
arcuata, *Modiola*, 79.
arcuata, Montacuta (Tellimya), 172.
arenosa, *Asaphis*, 306.
arenosa, *Tellina*, 305.
argyritis, Anomia, 29.
armatus, *Spondylus*, 114.
arrouana, Nalletia, 25.
Artemis, *Circe*, 226.
Artemis, *Cytherea* (*Circe*), 226.
Artemis, 243.
artensis, Mactra (Mactra), 208.
Artensis, *Trigonella*, 208.
Arthemis, 243.
ASAPHIS, 305.
asinus, *Chama*, 294.
aspera, *Chama*, 294.
aspera, *Hemimactra*, 210.
asperrima, *Tellina*, 180.
asperrima, Tellina (Tellina), 181.
asperrima, *Tellina* (*Tellinella*), 181.
aspersa, *Mactra* (*Mactrinula*), 210.
aspersa, Mactra (Mactrotoma), 209.
aspersa, *Spisula*, 210.
asquamulosa, *Tellina*, 181.
Assabensis, *Vulsella*, 89.
assimilis, *Macoma*, 194.
assimilis, *Macoma* (*Peronaea*), 194.
assimilis, *Pinna*, 138.
assimilis, *Tellina* (*Homala*), 194.
assimilis, *Tellina* (*Macoma*), 194.
assimilis, Tellina (Peronidia), 194.
assimilis, *Tellina* (*Tellinella*), 194.
Atactodea, 205.
atlantica, Callocardia (Vesicomya), 152.
atrata, *Pinna*, 134.
Atrina, 133, 134.
atropurpurea, *Pinna*, 133.
atropurpurea, Pinna (Pinna), 133.
attenuata, Isognomon, 84.
attenuata, Perna, 84.
attenuata, Vulsella, 89.
aurantiacum, Cardium (Laevicardium), 279.
aurea, *Phylloda*, 191.
auriculata, Diplodonta, 166.
aurifluus, *Axinaea* (*Pectunculus*), 62.
aurifluus, Glycymeris, 62.
aurifluus, *Pectunculus*, 62.
aurifluus, *Pectunculus* (*Pectunculus*), 62.
Auriscalpium, 318.
aurisiaca, *Venus*, 238.
auritum, *Ostracum*, 108.
australe, *Cardium* (*Bucardium*), 281.
australe, Cardium (Laevicardium), 280, 281.
australe, Cardium (Pectunculus), 281.
australe, *Laevicardium*, 281.
Australiense, *Cardium*, 289.
australis, ? *Avicula*, 98.
Australis, *Corbula*, 314.
australis, *Cytherea* (*Arthemis*) 244.
australis, *Donax*, 202.
australis, *Modiola*, 72.
australis, Plicatula, 115, 117.
australis, Poromya (Poromya), 326.
australis, Saxicava, 314.
australis, *Venus*, 244.
Austrodosinia, 243.
avellana, Arca (Navicula), 32.
Avicula, 90, 97.
Avicula, 95, 96.
aviculana, Cardita (Arcinella), var. excavata, 145.

badia, *Avicula*, 92.
badia, *Avicula* (*Meleagrina*), 100.
Baphia, 88.
barbata, *Avicula*, 98.
Barbatia, 41, 50, 53.
barbatia, Arca (Barbatia), 41.
barbatia, Arca, var., 45.
Bathyarca, 55.
*bathybia, Nucula (Nucula), 16.
*bathybia, Nuculana (Nuculana), 20.
BATISSA, 176.
*beauforti, Cardium (Trachycardium), 270.
belcheri, Limopsis, 60.
Belcheri, *Pectunculus*, 60.
bella, ? *Codakia*, 158.
bella, Lucina, 158.
Bellucina, 161.
Bengalensis, *Cyrena*, 175.
bengalensis, Dentilucina (Dentilucina), 162.
bengalensis, Geloina, 175.
bengalensis, *Lucina*, 162.
Bengalensis, *Omphaloclathrum*, 249.
Bertini, *Psammobia*, 301.
bicolor, *Donax*, 202.
bicolor, ? *Pinna*, 134.
bicolorata, *Arca*, 45, 47.
bifaria, *Tellina*, 192.
Bilobaria, 173.
bilocularis, Brachidontes (Septifer), 66.
bilocularis, Brachidontes, Septifer, 68, 69.
bilocularis, *Mytilus*, 69.
bilocularis, *Septifer*, 69.
bilocularis, *Tichogonia*, 69.
bipennis, *Margaritifera*, 104.
biradiatum, Cardium (Laevicardium), 279.
biradiatum, *Laevicardium*, 280.
birleyana, Arca (Anadara), 41.
birleyana, *Arca* (*Scapharca*), 41.
biscocta, *Dosinia* (*Austrodosinia*), 246.
Blainvillei, *Anatina*, 320.
Bornia, 170.
Bornii, *Cardium*, 268.

Boschasina, Anatina, 321.
Botula, 76.
brachiatus, Malleus, 102.
BRACHIDONTES, 66.
brachydontes, 66.
brassica, Hippopus, 294.
brevis, Myadora, 321.
brevis, Vesicomya, 153.
bruguieri, Paphia (Amygdala), 242.
Bruguieri, Tapes, 242.
Bruguieri, Tapes (Amygdala), 243.
Bruguieri, Tapes (Cuneus), 242.
Bruguieri, Venus, 242.
brunneus, Mytilus, 79.
Bucardia, 149.
Bucardium, 149.
bulla, Poromya (Cetoconcha), 326.
bullata, Anatina, 320.
bullata, Diplodonta, 164, 166.
bullata, Papyridea (Fulvia), 282.
bullatum, Papyridea, 282.
*butoni, Poromya (Cetoconcha), 327.

caelata, Artemis, 245.
caelata, Dosinia, 246.
caerulescens, Psammobia, 303.
caerulescens, Psammobia (Heteroglypta), 304.
calcarea, Tellina, 197.
caledonica, Axinaea, 64.
caledonica, Venus, 238.
Callista, 215, 246.
Callocardia, 152.
Callolima, 119.
Callucina, 161.
calophylla, Chione (Circemphalus), 258.
calophylla, Chione (Clausinella), 258.
calophylla, Circomphalus, 258.
calophylla, Cytherea, 258.
calophylla, Venus, 258.
calophylla, Venus (Anaitis), 258.
CALOPODIUM, 322.
calyculata, Cardita, 143.
calyculata, Cardita, 145.
calyculata, Chama, 143.
calyculata, Corbula, 143.
canaliculata, Cardita, 147.
cancellata, Chiona, 252.
cancellata, Pinna, 137.
cancellata, Venus, 247, 248.
cancellatus, Limopsis, 58.
cancellatus, Pectunculus, 58.
candida, Macoma (Psammacoma), 197.
candida, Tellina, 197.
canina, var. Isognomon isognomum, 83.
canina, Perna, 83.
Capsa, 305.
Capsoides, Tellina (Arcopagia), 186.
capsoides, Tellina (Tellinella), 186.
Capsularis, 305.
cardiiformis, Glycymeris, 65.
cardiiformis, Verticordia, 323.
cardioides, Actinobolus, 147.
cardioides, Cardita, 147.
cardioides, Cardita (Venericardia), 147.
cardioides, Cardium, 289.
cardioides, Venericardia, 147.
cardioides, Venericardia (Cardites), 147.
Cardiomya, 328.
Cardissa, 283.
cardissa, Cardissa, 284.
cardissa, Cardium, 283.
cardissa, Cardium (Corculum), 284.
cardissa, Cardium (Hemicardium), 284.
cardissa, Chama, 283.
cardissa, Corculum, 283.
cardissa, Hemicardium, 284.
cardissa, Semicardium, 284.
CARDITA, 142.
carditaeforme, Cardium (Fragum), 272.
carditaeforme, Hemicardium (Fragum), 272.
Cardites, 142.
CARDIUM, 266.
cardium, 289.
Cardium (Fragum) fragum, 275.
cardium (Trachycardium) sp., 271.
caribaea, Lima, 121.
*carinatum, Calopodium (Kennerlia), 323.
carnicolor, Tellina (Arcopagia), 190.
carnicolor, Tellina (Linearia), 190.
carnicolor, Tellina (Pseudarcopagia), 190.
Caryatis, 221.
casea, Tellina (Peronaea), 192.
caseus, Tellina, 192.
casta, Arcopagia, 188.
casta, Tellina (Arcopagia), 187.
castanea, Cardita, 146.
castanea, Cardita (Venericardia) 146.
castanea, Cytherea, 212.
castanea, Meretrix, 213.
castanea, Venus, 213.
castrensis, Lioconcha, 218.
castrensis, Venus, 218, 219.
catillus, Gafrarium, 233.
caudata, Isognomon (Perna), 87.
caudata, Perna, 87.
caviterga, Pinna menkei, var., 134.
Celebensis, Batissa violacea, 177.
celebensis, Lima (Acesta), 127.
centumliratum, Cardium (? Fragum), 275.
Cetoconcha, 326.
ceylanicus, Catopodium (Coelodon), 322.
ceylonica, Cyclas, 174.
ceylonica, Venus, 174.
CHAMA, 295.
Chama (Chama) spp., 298.
Chama (Pseudochama) sp., 298.
chamberlaini, Teredo, 318.
Chametrachaea, 290.
chemnitzii, Chione (Chamelaea), 238.
chemnitzii, Pinna, 138.
chemnitzii, Pullastra, 238.
chilensis, Malletia, 110.
chinensis, Avicula, 92.
chinensis, Cuspidaria (Cuspidaria), 330.
chinensis, Plicatula, 116, 117.
chinensis, Pteria, 92, 93, 95.
CHIONE, 252.
Chlamydoconcha, 170.
chloroleuca, Galeomma, 167.
Choristodon, 264.
chrysostoma, Lucina, 154.
ciliatus, Spondylus, 110.
cinerea, Tapes, 241.
cinnamar, Tellina, 190.
cinnamomea, Botula, 79.
cinnamomea, Lithophaga (Botula), 76, 79.
cinnamomea, ? Modiola, 79.
cinnamomea, Mytilus, 80.
cinnamomeus, Lithodomus (Botula), 79.
cinnamonila, Modiola, 79.
cinnamomina, Lithodomus, 79, 80.
cinnamominus, Mytilus, 79.
Circe, 218, 228.
CIRCE, 222.
cistula, Abra, 200.
citrinus, Pectunculus, 274.
clathrata, Tellina, 192.
Clausina, 247.
Clausinella, 252.

CLEMENTIA, 262.
coarctata, Macha (Azor), 311.
coarctatus, Psammosolen, 312.
coarctatus, Solecurtus (Azor), 311.
coarctatus, Solecurtus (Azor), 311.
coarctatus, Solen, 311.
coaxans, Chama, 174.
coaxans, Geloina, 174.
coaxans, Venus, 174.
coccineus, Spondylus, 110, 111.
CODAKIA, 155.
codok, Chama, 155.
Coelodon, 322.
cometa, Arca, 41.
cometa, Arca (Acar), 41.
cometa, Arca (Barbatia), 41, 49.
cometa, Barbatia, 41.
communis, Margaritifera, 98.
complanata, Arca (Barbatia), 43.
*compressa, Vesicomya, 153.
compta, Tellina, 192.
compta, Tellina (Angulus), 192.
canaliculata, Cardita (Venericardia), 147.
concamera, Cucullaea, 57.
concamerata, Cucullaea, 57.
concinna, Hysteroconcha (Lamelliconcha), 217.
confusa, Nuculana (Nuculana), 19.
confusa, Laeda, 19.
Confusa, Leda, 19.
conglobata, Dosinia (Austrodosinia), 245.
conspicua, Malletia, 25.
constrictus, Solen, 311.
*convexa, Cuspidaria (Cuspidaria), 329.
convexior, Abra, 200.
cor, Crenella (Modiolaria), 76.
cor, Cyrena, 174.
cor, Isocardia, 149.
cor, Mytilus, 75.
corallinum, Mactra, 207.
Corbicula, 174.
corbicula, Arca, 37.
corbis, Tellina, 190.
corbis, Tellina (Arcopagia), 190.
corbis, Venus, 250.
Corbula, 307.
corbula, Arca, 37.
corbula, Bucardium, 36.
CORCULUM, 283.
cornea, Arca, 38.
cornucopia, chama, 297.
corpulenta, Neilonella, 27.
*corrugata, Cuspidaria (Cuspidaria), 329.
corrugata, Gari, 299.
corrugata, Gari (Amphichaena), 299.
corrugata, Psammobia, 299.
corrugata, Psammobia (Gari), 299.
corrugata, Psammobia (Heteroglypha), 299.
costata, Arcopagia, 188.
costata, Naranio, 265.
costata, Petricola, 264.
costata, Tellina (Arcopagia), 188.
costata, Tellina (Linearia), 189.
costata, Tellina (Pseudarcopagia), 188, 190.
costata, Tellina (Tellinella), 188.
costatum, Cardium, 266.
costatus, Spondylus, 109.
costellata, ?Avicula, 96.
costellata, Perna, 85.
costellifera, Chione (Omphaloclathrum), 256.
costellifera, Chione (Timoclea), 256.
costellifera, Venus, 256.
costellifera, Venus (Chione), 256.
coturnix, Avicula, 90.
coturnix, Pteria, 90.
craniolaris, Anomia, 29.
crassa, Aloidis, 309.
crassa, Corbula, 309.
crassa, Corbula (Aloidis), 309.
crassa, Tellina (Arcopagia), 178.
CRASSATELLA, 140.
Crassatella, spp., 142.
Crassatellites, 140.
*crassisquamata, Chione (Timoclea), 257.
*crebrilirata, Verticordia (Verticordia), 324.
crebrisulca, Venus, 251.
crenulata, Vulsella, 90.
Crista, 228.
crista-galli, Lopha, 132.
cristagalli, Mya, 132.
Crista-galli, Mytilus, 131.
Crista-galli, Ostrea, 132.
crista-galli, Ostrea (Dendostrea), 132.
crista-galli, Ostrea (Lopha), 129, 131.
cristagalli, Ostrea (Mytilus), 132.
cristata, Tellina, 190.
cristella, Chama (Pseudochama), 295.
crocea, Avicula, 92, 93.
crocea, Chametrachaea, 292.
crocea, Lima, 127.
crocea, ? Mytilus-Avicula, 92.
crocea, Pteria, 92.
crocea, Tridacna, 292.
cruciata, Arca, 45, 46.
cruentum, Cardium, 272.
Cryptogramma, 260.
Ctenocardia, 266.
Ctenoconcha, 25.
Ctenoides, 119.
Cucullaea, 56.
CULTELLUS, 312.
cultellus, Cultellus, 312.
cultellus, Cultellus (Enisculus), 312.
cultellus, Cultellus (Cultellus), var. *lividus*, 312.
Cumingi, Anaitis, 258.
cumingi, Cardita, 147.
cumingi, Chione (Circomphalus), 258.
cumingi, Divaricella, 161.
Cumingi, Lucina, 161.
cumingi, Lucina (Cyclas), 161.
cumingi, Lucina (Divaricella), 161.
cumingi, Nucula (Nucula), 14.
Cumingi, Venus, 258.
Cumingiana, Loripes, 161.
cumingianus, Musculus, 76.
Cumingianus, Mytilus, 69.
Cumingii, Avicula, 98.
Cumingii, Clementia, 262.
cumingii, Limopsis, 60.
cumingii, Septifer, 69.
Cumingii, Tridacna, 292.
cunealis, Arca, 32.
cuneata, Anomalocardia, 37.
cuneata, Arca, 37.
cuneata, Arca (Anadara), 37.
cuneata, Donax (Latona), 202.
cuneata, Modiolaria, 75.
cuneata, Venus, 230.
cuneatus, Donax (Latona), 203.
cuneatus, Musculus, 75.
CUSPIDARIA, 327.
Cuspidaria, 334.
cuspidaria, Cuspidaria, 328.
Cyclas, 174.
cygnus, Tellina (Peronaea), 196.
cygnus, Tellina (Peronidia), 196.
Cygnus, Tellina (Tellinella), 196.
cylindrica, Montacuta, 172.
Cypricardia, 148.
Cyrena, 173.
Cytherea, 212, 243, 246.

Dactylus 77.
dactylus, Lithophaga, 76.
dactylus, Perna, 87.
daemonicus, Malleus, 108.
dautzenbergi, Arca (Anadara), 39.
*dautzenbergi, Glycymeris, 65.
*dautzenbergi, Hysteroconcha (? Lamelliconcha), 217.
*dautzenbergi, Limopsis, 60.
*dautzenbergi, Myonera, 334.
*dautzenbergi, Nucula (Nucula), 17.
Davila, 205.
decurtata, Malleus regula var., 106.
decurtatus, Malleus, 106.
decurvata, Arca, 47.
decurvata, Barbatia, 47.
decurvata, Arca (Barbatia), 47.
decussata, Arca, 42, 44, 45.
decussata, Arca (Barbatia), 42.
decussata, Arca (Barbatia) var. lima 44.
decussata, Arca (Byssoarca), 42.
decussata, Barbatia, 42.
decussata, Byssoarca, 42.
decussata, Paphia (Amygdala), 233.
decussata, Tellina (Pseudarcopagia), 178.
deflorata, Asaphis, 305.
deflorata, Venus, 305.
delicatula, Codakia, 158.
delicatula, Lucina, 158.
*delicatula, Neilonella, 28.
Dendostrea, 129.
dentata, Lucina, 161.
denticulata, Psammobia, 304.
denticulata, Tellina, 187.
denticulatum, Cardium, 284.
dentifera, Dentilucina (Dentilucina), 161.
dentifera, Lucina, 161.
dentifera, Phacoides, 161.
DENTILUCINA, 161.
depauperata, Tellina, 195.
depauperata, Tellina (Macoma), 195.
deshayesiana, Dimya, 118.
Deshayesiana, Kellia (Pythina), 170.
deshayesiana, Pythina, 170.
deshayesiana, Verticordia (Verticordia), 323.
Deshayesii, Donax, 204.
Deshayesii, Donax (Latona), 203.
deshayesii, Tellina (Tellina), 182.
deshayesii, Tellina (Tellinella), 182.
*diaphana, Nucula (Nucula), 15.
dichotoma, Asaphis, 305.
dichotoma, Sanguinolaria, 306.
digitatus, Spondylus, 109, 110.
dilatata, Vulsella, 90.
DIMYA, 118.
dione, Hysteroconcha, 215.
DIPLODONTA, 164.
discoidea, Batissa violacea, 177.
discors, Crenella, 76.
discors, Modiola, 76.
discors, Musculus, 75.
discors, Mytilus, 76.
discors, Venus, 228, 230.
*discrepans, Nuculana (? Ledella), 23, 24.
discus, Tellina, 184.
discus, Tellina (Arcopagia), 184.
dispar, Circe, 230.
dispar, Circe (Crista), 231.
dispar, Cytherea, 230.
dispar, Cytherea (Circe), 230.
dispar, Gafrarium, 230.
dispar, Gari (Gari), 302.
dispar, Psammobia, 302.
dispar, Psammobia (Gari), 302.
dispar, Venus, 230.
divaricata, Acar, 50.
divaricata, Arca (Acar), 50.
divaricata, Barbatia (Acar), 50.
divaricata, Lucina, 160, 161.
divaricata, Naranio, 265.
divaricata, Nucula, 19.
divaricata, Nucula (Acila), 13.
divaricata, Petricola, 265.
divaricata, Venus, 264.
divaricatum, Choristodon, 265.
DIVARICELLA, 160.
divergens, Codakia, 157.
divergens, Codokia (Jugonia), 158.
divergens, Lucina, 157.
divergens, Lucina (Codakia), 158.
divergens, Lucina (Lentillaria), 158.
divergens, Petricola (Choristodon), 264, 265.
divergens, Venus, 264.
divisum, Ostreum, 102.
divisus, Ostreum, 102.
dolabrata, Mactra, 210.
dolabrata, Mactra (Mactrinula), 210.
dolabrata, Mactrinula, 210.
dolorosum, Corculum, 285.
domingensis, Arca, 50.
Domingensis, Barbatia, 51.
donaceum, Cardium, 289.
donaciforme, Adacna (Didacna), 290.
donaciforme, Cardium, 289.
donaciforme, Cardium (Fragum), 290.
donaciforme, Cardium (Hemicardium), 290.
donaciforme, Fragum (Hemicardium), 289.
donaciforme, Hemicardia (Fragum), 290.
donaciformis, Acar, 50.
donaciformis, Arca, 50.
donaciformis, Arca (Acar), 50.
donaciformis, Barbatia (Acar), 50.
donaciformis, Hemicardium, 290.
donaciformis, Hemidonax, 289.
donaciformis, Nucula (Nucula), 14.
donacinum, Mesodesma, 205.
DONAX, 202.
Donax, 289.
dorsalis, Xylophaga, 317.
DOSINIA, 243.
Dosinia (Austrodosinia) sp., 246.
*dubia, Cuspidaria (Rhinoclama), 333.
*dubia, Diplodonta, 166.
*dubia, Neilonella, 27.
dubia, Rocellaria, 315.
*dubius, Modiolus (Modiolus), 73.
ducalis, Spondylus, 111.
dunkeri, Lima, 123.
dunkeri, Lima (Lima), 123.
dunkeri, Malletia, 26.
Dussumieri, Isocardia, 150.
dysira, Venus, 252.

echinaria, Cardita, 147.
echinaria, Cardita (Glans), 147.
edentula, Loripes, 154.
edentula, Lucina, 154.
edentula, Lucina (Anodontina), 154.
edentula, Lucina (Loripes), 154.
edentula, Lucina (Thyasira) 154.
edentula, Venus, 154.
edulis, Ostrea, 129.
egena, Mactra, 210.
egena, Mactrinula, 210.
Ehrenbergi, Anomalocardia, 38.
ehrenbergi, Arca (Anadara), 38.
Ehrenbergi, Arca (Anomalocardia), 38.
*elaborata, Nuculana (Thestyleda), 22, 23.
electrina, Pinna, 133.
Electroma, 95, 96.
elegantina, Chione, 238.

elegantina, Chione (*Chamelaea*), 238.
elegantina, Venus, 237.
elongata, Modiola, 71.
elongata, Pandora, 322.
elongata, Perna, 71.
elongata, Pinna saccata, 139.
elongata, Tridacna, 293.
elongatissima, Tridacna, 293.
elongatum, Calopodium (Coelodon), 322.
elongatum, Cardium (Trachycardium), 271.
elongatus, Coelodon, 322.
elongatus, Modiolus (Modiolus), 71.
emarginata, Tellina (Tellina), 182.
emarginata, Tellina (*Tellinides*), 182.
emarginata, Tellinides, 182.
emarginatus, Solecurtus (*Azor*), 312.
emarginatus, Solen, 311.
Embla, 326.
*encrypta, Malletia, 26.
Enisculus, 312.
Ephippium, 30.
ephippium, Anomia, 29.
ephippium, Placenta, 30.
ephippium, Placuna, 30.
Ephippodonta, 170.
equinus, Hippopus, 295.
eremita, Ostrea, 85.
eremita, Perna, 85.
erosa, Geloina, 174.
erosa, Venus, 174.
*erronea, Malletia, 25.
erythraea, Cytherea, 226.
erythrea, Cytherea (*Circe*), 226.
erythraeensis, Dactylus, 77.
erythraensis, Tellina (*Peronaea*), 192.
Essingtonensis, Cardita, 145.
Essingtonensis, Mytilicardia, 145.
ethima, Diplodonta, 166.
eucosmia, Dentilucina (Bellucina), 161, 163.
euglypta, Pinna, 133.
Eumodiolus, 71.
eunice, Dosinia (*Austrodosinia*), 246.
exarata, Amphidesma, 198.
exarata, Paphia (*Paphia*), 235.
exarata, Semele, 198.
exarata, Tapes, 235.
exarata, Tapes (*Pullastra*), 235.
exarata, Tapes (*Textrix*), 235.
exarata, Venus, 235.
exasperata, Codakia, 156.
exasperata, Dosinia (Austrodosinia), 246.
exasperata, Lucina, 156.
exasperata, Lucina (*Codakia*), 156.
excavata, Cardita, 145.
excavata, Cardita (Arcinella) avicularia, var., 145.
excavata, Lima (Acesta), 119.
excavata, Mytilicardia, 145.
excavatum, Cardium, 287.
excisa, Tichogonia, 68.
excisa, Tichogonia (*Septifer*), 68.
excisus, Brachidontes (Septifer), 68.
excisus, Mytilus, 68.
excisus, Mytilus (*Septifer*), 68.
excisus, Septifer, 68.
exiguus, Musculus fuscus, var., 79.
eximia, Anatina, 320.
eximia, Cyrena, 176.
*eximia, Poromya (Cetoconcha), 327.
*exodonta, Nucula (Nucula), 16.
expansa, Cyrena, 176.
expansa, Geloina, 176.
expansa, Verticordia, 323.
*expansa, Verticordia (?), 324.
explanata, Mactra, 211.
extensa, Batissa violacea, 177.
exustus, Brachidontes (Hormomya), 66, 67.
exustus, Mytilus, 66.

faba, Donax (Latona) 204.
faba, Scintilla, 169, 170.
fabrefacta, Arcopagia, 188.
fabrefacta, Tellina (? Arcopagia), 188.
fabula, Lucina, 159.
fabula, Lucina (Myrtea), 159.
fabula, Myrtea, 159.
fallax, Cyrena, 176.
fallax, Macoma (Psammacoma), 197.
fallax, Tellina (*Macoma*), 197.
fasciata, Arca, 48.
fasciata, Chione (Clausinella), 232.
fasciata, var. *radula, Arca* (*Barbatia*), 48.
femorale, Perna, 82.
femoralis, Isognomon isognomum, var., 84.
femoralis, Perna, 82, 84.
fenestrata, Lima, 126.
*fenestrata, Lima (Limaria), 126.
ferruginea, Tridacna, 292.
fervensis, Tellina, 298.
Fesonia, 142.
festivum, Cardium (*Cerastoderma*), 279.
festivum, Cardium (? Ctenocardia), 279.
fibula, Chama (Chama), 297.
fibula, Codakia, 158.
fibula, Lucina, 157.
fibula, Lucina (*Codakia*), 157.
filosus, Calopodium (Kennerlia), 322.
fimbriata, Avicula, 101.
fimbriata, Margaritifera, 101.
fimbriata, Perna, 83.
Fistulana, 315.
*flabelliformis, Dentilucina (Callucina), 163.
flavida, Modiola, 73.
flavida, Perna, 73.
flavida, Volsella, 73.
flavidus, Modiolus (*Modiolus*), 73.
flavum, Cardium (Trachycardium), 266, 269.
flavum, Trachycardium, 267.
flexuosa, Anatina, 320.
florida, Callista, 215.
florida, Macrocallista, 216.
fluctuosa, Anomalocardia, 260.
foliacea, Anaitis, 259.
foliacea, Chione, 259.
foliacea, Chione (*Clausinella*), 260.
foliacea, Cytherea, 260.
foliacea, Phylloda, 191.
foliacea, Tellina (Phylloda), 178, 190.
foliacea, Venus, 259.
foliacea, Venus (*Chione*), 259.
foliaceus, Spondylus, 109.
Folium, Tellina, 190.
fornicata, Hemicardia (*Ctenocardia*), 276.
fornicatum, Cardium (Ctenocardia), 276, 279.
fornicatum, Cardium (*Fragum*), 276.
Fôrskalii, Ostrea, 105.
forticostata, Cuspidaria (Cardiomya), 333.
Fossularca, 53.
fragilis, Lima, 124.
fragilis, Lima (*Ctenoides*), 124.
fragilis, Lima (Limaria), 124, 126.
fragilis, Lima (*Mantellum*), 124.
fragilis, Mactra (Mactrotoma), 207.
fragilis, Mantellum, 124.
fragilis, Ostrea, 124.
fragilis, Pecten, 124.
fragilis, Radula (*Ctenoides*), 124.
fragilis, Radula (*Mantellum*), 124.
fragilis, Spondylus, 111.
Fragum, 266.

fragum, Cardium (Fragum), 274.
fragum, Cardium (Hemicardium), 274.
fragum, Hemicardium, 275.
fragum, Hemicardium (Ctenocardia), 275.
fucata, Avicula, 99.
fulgida, Modiola, 72.
fulgida, Perna, 72.
fulgurata, Circe, 224.
fultoni, Nucula, 18.
fumata, Pinna, 133.
fumigata, Pinna, 135.
fusca, Arca, 45.
fusca, Arca (Barbatia), 45.
fusca, Cytherea, 213.
fusca, Lithophaga, 79.
fusca, Lithophaga (Botula), 80.
fusca, Meretrix, 213.
fusca, Perna, 135.
fuscus, Musculus exiguus, var. 79.
fuscus, Septifer, 68.

gaederopus, Spondylus, 107, 109, 110, 111.
GAFRARIUM, 228.
Gafrarium, 223.
GALEOMMA, 167.
Galeomma, 170.
gallua, Paphia (Protapes), 233.
GARI, 298.
gari, Psammobia, 298.
gari, Tellina, 298, 303.
Gastrochaena, 315.
GELOINA, 173.
Gibbia, Circe, 231.
gibbia, Circe (Crista), 232.
gibbia, Cytherea, 231.
gibbia, Cytherea (Crista), 232.
gibbia, Gafrarium, 232.
gibbosa, Circe, 232.
*gigantea, Cuspidaria (Cuspidaria), 329.
gigas, Chama, 292.
Gigas, Chama, 291.
Gigas, Ostrea, 129.
gigas, Tridacna, 290.
glabrata, Mesodesma (Atactodea), 205.
Glans, 147.
globosa, Diplodonta, 164, 165.
globosa, Lucina, 154, 165.
globosa, Lucina (Anodontina) 165.
globosa, Lucina (Cyclas), 165.
globosa, Lucina (Loripes), 165.
globosa, Venus, 165.
globosum, Cryptodon, 165.
globosum, Ostreum, 109.
globosus, Axinus, 154.
globosus, Cryptodon, 165.
globosus, Loripes, 154, 165.
*gloriosa, Poromya (Cetoconcha), 326.
GLOSSOCARDIA, 148.
GLYCYMERIS, 61.
Glycymeris glycymeris, 61.
Gobraeus, 298.
Gouldiana, Cardiomya, 331.
gouldiana, Cuspidaria (Cardiomya), 328, 331, 332.
Gouldiana, Neaera, 331.
gouldiana, Neaera (Cardiomya), 331.
gracilis, Lithophaga, 77.
gradata, Acar, 50.
gradata, Barbatia (Acar), 51.
GRAMMATOMYA, 298, 305.
granosa, Anomalocardia, 37.
granosa, Arca (Anadara), 36.
granosa, Arca (Scapharca), 38.
granosa, Arca, var. *minor,* 37.
granosa, Chama, 156.
granosa, Donax, 202.
granosus, Pectunculus, 36.
granulata, Arca, 44.
granulata, Arca (Barbatia), 44.
granulata, Poromya, 326.
granulosa, Arca (Cucullaea), 57.
granulosa, Cucullaea, 57.
graphica, Cytherea, 212.
graphica, Meretrix, 213.
graphica, Venus, 213.
gravis, Pectunculus, 249.
Grayana, Arca, 44.
grayana, Arca (Barbatia), 44.
Grayana, Barbatia, 44.
Griffithiana, Arca, 44.
gubernaculum, Pinna, 135.
gubernaculum, Tellina, 198.

habrotima, Tellina (Arcopagia), 189.
Hankeyana, Arca, 36.
Hankeyana, Arca (Anomalocardia), 36.
Hanleyi, Axinaea, 64.
Hanleyi, Pinna, 138.
*_hedleyi, Dentilucina (Bellucina),_ 163.
helblingi, Arca, 44.
Hemicardia, 283.
Hemicardium, 283.
hemicardium, Cardium, 286.
hemicardium, Cardium (Fragum), 287.
hemicardium, Cerastes, 286.
hemicardium, Corculum, 286.
hemicardium, Fragum, 286.
hemicardium, Hemicardium, 286.
hemicardium, Hemicardium (Fragum), 286.
HEMIDONAX, 289.
Here, 154.
heroicus, Glycymeris, 63.
heteroptera, Pteria, 90.
hians, Vulsella, 88.
Himantopoda, 102.
hindsiana, Cuspidaria (Cuspidaria), 330.
hippoidea, Tellina, 185.
HIPPOPUS, 293.
hippopus, Chama, 294.
hippopus, Hippopus, 293.
hippopus, Tridacna, 294.
hippopus, Tridachnes, 294.
hirundo, Avicula, 92.
hirundo, Mytilus, 93, 96.
hirundo, Pteria, 90.
hispidula, Anatina, 320.
Histrio, Cytherea, 244.
histrio, Dosinia (Austrodosinia), 244.
Histrio, Venus, 244.
Hormomya, 66.
horrida, Plicatula, 166.
hoylei, Glycymeris, 65.
Hoylei, Pectunculus, 65.
hügeli, Vulsella, 90.
humana, Isocardia, 149.
*humilior, Malletia, 26.
hungerfordi, Cardium (Papyridea), 281.
hyalina, Clementia, 262.
hyalina, Venus, 262.
hyotis, Alectryonia, 130.
hyotis, Lopha, 130.
Hyotis, Mytilus, 129.
hyotis, Mytilus (Ostrea), 130.
Hyotis, Ostrea, 129.
hyotis, Ostrea (Alectryonia), 130.
hyotis, Ostrea (Lopha), 129.
hyotis, var. imbricata, Ostrea (Lopha), 130.
hyperborea, Yoldia, 24.
HYSTEROCONCHA, 216.
hystrix, Cardium, 276.
hystrix, Cardium (Ctenocardia), 266, 278.

hystrix, Hemicardia (Ctenocardia), 276.
hystrix, Pinna, 134, 136.
hystrix, Spondylus, 110.
hystrix, var. ocellatus, Spondylus, 111, 112.

Iacra, 199.
ililima, Vulsella, 89.
imbricata, Arca, 32.
imbricata, Barbatia, 32.
imbricata, Chama, 292.
imbricata, Chione (Timoclea), 257.
imbricata, Hemicardia (Ctenocardia), 278.
imbricata, Margaritifera, 99.
imbricata, Ostrea, 130.
imbricata, Ostrea (Alectryonia), 131.
imbricata, Ostrea (Lopha) hyotis, var., 130.
imbricata, Plicatula, 115, 116.
imbricata, Tridacna, 293.
imbricatum, Cardium, 274, 278.
imbricatum, Cardium (Ctenocardia), 277.
imbutus, Spondylus, 109.
immaculata, Cytherea pectinata, var., 228.
impacta, Crenella, 76.
impacta, Modiola, 76.
impacta, Modiolaria, 76.
impactus, Musculus, 75.
impactus, Mytilus, 75.
imperialis, Spondylus, 113.
impolitum, Cardium (Trachycardium), 269.
impressa, Cyrena, 176.
impudica, Cytherea, 212.
impudica, Cytherea (Meretrix), 213.
impudica, Meretrix, 213.
impudica, Venus, 213.
inaequalis, Mactra (Mactra), 209.
inaequalis, Trigonella, 209.
inaequilatera, Chama, 178, 235, 239, 240.
inaequilatera, Tellina, 202, 241.
inaequivalvis, Calopodium, 322.
*inanis, Abra, 200.
*inanis, Dentilucina (Dentilucina), 162.
incarnata, Tellina, 190.
incerta, Arca (Acar), 52.
incerta, Arca (Barbatia), 52.
incisa, Tellina, 195.
indica, Limopsis, 59.
indica, Vesicomya, 152.
inermis, Ostrea, 131.
inflata, Arcopagia, 186.
inflata, Atrina, 137.
inflata, Cytherea, 222.
inflata, Lima, 119.
inflata, Tellina, 185.
inflata, Tellina (Arcopagia), 185.
inflata, Tellina (Arcopaginula) 186.
inflata, Tellina (Tellinella), 186.
inopinata, Leda, 21.
inopinata, Megaleda, 21.
inopinata, Nuculana, 21.
inopinata, Nuculana (Megaleda), 19, 21.
inscripta, Meretrix, 213.
insignis, Nucula, 18.
integra, Turquetia, 173.
interrupta, Codakia, 158, 159.
interrupta, Cytherea, 158.
interrupta, Lucina, 159.
interrupta, Lucina (Codakia), 159.
interrupta, Lucina tigerina, var. 159.
interrupta, Venus, 158.
inversum, Cardium, 285.
inversum, Hemicardium, 285.
iostoma, Chama (Chama), 296.
iridescens, Avicula, 92, 93.
iridescens, Neaera, 201.
iridescens, Semele (Theora), 201.
iridescens, Theora, 201.
irradians, Avicula, 101.
irudina, Arca, 50.
Irus, 263.
irus, Venerupis, 263.
ISOCARDIA, 149.
isocardia, Cardium (Trachycardium), 266.
isocardia, Vulsella, 90.
Isocardium, 149.
*ISOCONCHA, 173.
isogona, Perna, 82.
ISOGNOMON, 81.
isognomon, Isognomon, 84.
Isognomon, Ostrea, 82.
Isognomon, Pedalion, 82.
Isognomum, Melina, 82, 83.
Isognomum, Ostrea, 82, 84.
isognomum, Pedalion, (Isognomum), 82.
Isognomum, Perna, 82, 83, 84.
isogonum, Isognomon, 82.
isogonum, Perna, (Isognomon), 82.
Isseli, Arcopagia, 185.
Isseli, Tellina, 185.
isseli, Tellina (Arcopagia), 185.

jamaicensis, Dentilucina, 161.
japonica, Chione (Chamelaea), 238.
japonica, Lima, 123.
japonica, Lima (Limutula), 123.
japonica, Paphia (Paratapes) 237.
japonica, Pinna, 138.
japonica, Tapes, 241.
japonica, Venus, 237.
japonica, Venus (Amygdala), 238.
japonica, Venus (Tapes) 238.
japonica, Verticordia, 323.
jeffreysii, Lyonsiella, 325.
jousseaumei, Diplodonta, 166.
jubar, Tellina, 179.
jubar, Tellina (Tellina), 179.
jubar, Tellina (Tellinella), 179.
Jugonia, 155.
jukesi, Chione (Chamelaea), 252.
jukesi, Chione (Ventricola), 251.
Jukesi, Venus, 251.
jukesii, Amphidesma, 198.
jukesii, Chama (Chama), 297.
jukesii, Semele, 198.

KELLIA, 167.
Kellia, 170.
Kellya, 167.
Kennerlia, 322.
kingicola, Crassatella, 142.
kingicola, Eucrassatella, 142.
Kraussi, Arca, 32.
Kraussi, Mytilus (Aulacomya), 69.
Kraussi, Mytilus (Septifer), 69.
Kraussi, Septifer, 69.
Kraussi, Tichogonia, 69.

labiata, Anatina, 320.
labiosa, Meretrix, 212.
Labuana, Venus, 238.
lacerta, Venus, 249.
lacteus, Cultellus, 312, 313.
lacteus, Solen, 313.
Laeda, 18.
laeta, Caryatis, 222.
laeta, Cytherea, 222.
laeta, Cytherea (Caryatis), 222.
laeta, Dione, 222.
laeta, Venus, 222.
laeve, Ostreum, 85.
Laevicardium, 266.
Laevigata, Cyclas, 174.
laevigatum, Cardium, 279.
laevis, Chama, 212.

laevis, Tellina, 178.
lamarcki, Isocardia (Meiocardia), 149, 150, 151.
lamarcki, Spondylus 112.
Lamarckiana, Isocardia (Meiocardia), 151.
Lamarckii, Bucardia (Meiocardia), 151.
Lamarckii, Chione (Omphaloclathrum), 247.
Lamarckii, Dosinia, 247.
Lamarckii, Isocardia, 151.
lamarckii, Meiocardia, 151.
lamarckii, Venus (Chione), 247.
Lamatus, Mytilus, 76.
lamellaris, Antigona, 247.
lamellaris, Chione, 247.
lamellaris, Chione (Antigona), 247.
lamellaris, Cytherea, 247.
lamellaris, Omphaloclathrum, 247.
lamellaris, Venus, 247.
lamellaris, Venus (Antigona) 247.
lamellata, Circumphallus, 259.
lamellata, Venus, 259.
laminata, Arca (Acar), 50.
laminata, Barbatia (Acar), 50.
*lamyi, Diplodonta, 166.
lanceolata, Nuculana (Poroleda), 19.
lanceolata, Tellina (Angulus), 178.
lanceolata, Tridacna, 293.
Lanistina, 74.
lapicida, Naranio, 265.
lapicida, Petricola, 264.
lapicida, Petricola (Choristodon), 265.
lapicida, Petricola (Naranio), 265.
lapicida, Venus, 264.
lapicidum, Choristodon, 265.
lata, Avicula, 91.
lata, Lima, 123.
lata, Limopsis, 59.
lata, Pinna, 135.
lata, Pteria, 91.
lata, Theora, 201.
latecostata, Perna, 87.
LATERNULA, 318.
Latona, 202.
lauta, Tellina, 192.
lauta, Tellina (Angulus), 192.
lazarus, Chama, 295.
Leda, 13, 27.
Leda, 18.
Ledella, 19, 24.
legumen, Isognomon, 87.
legumen, Ostrea, 87.
legumen, Perna, 87.
legumen, Solecurtus, 311.
Lenticularia, 155.
Lentillaria, 155.
lepidula, Leda, 24.
lepidula, Nucula, 24.
lepidula, Yoldia, 24.
leptocarya, Lima (Limatula), 128.
levigata, Lithophaga, 78.
levigata, Lithodomus, 78.
levigata, Lithophaga (Lithophaga), 78.
LIMA, 119.
lima, Arca, 43.
lima, Arca, 44.
lima, Arca (Barbatia), 44.
lima, Barbatia, 44.
lima, Barbatia (Barbatia), 44.
lima, Dimya, 118.
lima, Lima, 119, 121.
lima, Lima (Lima), 119.
lima, Lima (Radula), 121.
lima, Mantellum, 120.
lima, Ostrea, 120.
lima, Pecten, 120.
limaeformis, Vulsella, 90.
Limaria, 119.
Limatula, 119.
limatula, Callista, 221.
limatula, Caryatis, 221.
limatula, Cytherea, 221.
limatula, Cytherea (Caryatis), 221.
limatula, Dione, 221.
limatula, Pitar, 221.
limicola, Anatina, 321.
Limoides, Ostrea, 85.
limoides, Perna, 85.
LIMOPSIS, 57.
lingua-felis, Vulsella, 90.
linguaeformis, Perna, 87.
linguatula, Avicula, 96.
linguatula, Lima, 125.
linguatula, Petricola, 314.
lingulata, Vulsella, 88, 89.
Linnaei, Donax cuneata, var. 202.
Linnaei, Perna, 85.
linnaei, Tellina foliacea, var., 190.
Linnaei, Tellina Virgata, var., 178.
linnaei, Venus pectinata, var., 231.
Linnaei, Venus punctata, var., 155.
linter, Arca, 34.
LIOCONCHA, 218.
Lioconcha sp. 220.
lirata, Circe, 227.
Lischkeana, Pinna, 138.
Lischkei, Anomalocardia, 38.
lischkei, Arca (Anadara), 38.
Lischkei, Arca (Anomalocardia), 38.
lischkei, Lima (Ctenoides), 123.
Lischkei, Lima (Lima), 123.
literata, Paphia (Tapes), 233, 235.
literata, Paphia (Tapes), 236.
literata, Venus, 253.
literatus, Pectunculus, 235.
Lithodomus, 76.
LITHOPHAGA, 76.
lithophaga, Lithophaga, 76.
Lithophaga (Lithophaga) sp., 79.
lithophaga, Petricola, 264.
Lithophagus, 76.
Lithophagus, Mytilus, 77.
litterata, Chama, 235.
litterata, Paphia, 235.
litterata, Pullastra, 235.
litterata, Tapes (Amygdala), 236.
litterata, Tapes (Parembola), 236.
litterata, Venus, 234, 237.
litteratus, Tapes, 236.
livida, Axinea, 63.
lividus, Cultellus, 312.
lividus, Cultellus (Cultellus), 312.
lividus, Glycymeris, 63, 64.
lividus, Pectunculus, 63.
lividus, Pectunculus (Axinea), 63.
lobata, Chama (Accinella), 296.
lobata, Chama (Chama), 296.
longicauda, Avicula, 92.
Lopha, 129.
loringi, Nucula, 14.
lotorium, Avicula, 93, 94.
LUCINA, 153.
lucinalis, Naranio, 265.
lucinalis, Petricola, 264.
LUNULICARDIA, 287.
lupinus, Diplodonta, 164.
lurida, Pinna, 138.
lusoria, Cytherea, 212, 213.
lusoria, Venus, 212.
lutea, Lucina, 169.
lutea, Scintilla, 169.
LUTRARIA, 211.
lutraria, Chama, 174.
LYONSIELLA, 325.
Lytocarpus, 91.

*macassari, Dentilucina (Bellucina), 163.
Macassarica, Batissa violacea, 177.
*macassariensis, Tellina (Peronidia), 197.

MacCoyi, Arca, 50.
MACOMA, 197.
Macoma, 187.
MACROCALLISTA, 215.
Macrocallista sp., 216.
macrochisma, Gastrochaena, 315.
macrochisma, Rocellaria (Rocellaria), 315.
macrophylla, Irus, 263.
macrophylla, Rupellaria, 263.
macrophylla, Venerupis, 263.
macroptera, Avicula, 93.
macroptera, Pteria, 93.
macrorhynchus, Cuspidaria (Cuspidaria), 328.
Mactra, 140.
MACTRA, 207.
Mactrinula, 207.
maculata, Arca, 32.
maculata, Byssoarca, 32.
maculata, Mactra (Mactra), 207.
maculata, Mactra (*Trigonella*), 208.
maculata, Trigonella, 208.
maculatus, Hippopus, 294.
maculatus, Pectunculus, 283.
maculatus, Tridacna, 294.
maculosa, Anomalocardia, 35.
maculosa, Arca, 35.
maculosa, Arca (*Anomalocardia*), 35.
maculosa, Gari (Gari), 298.
maculosa, Psammobia, 298, 301.
maculosa, Psammobia (*Gari*), 299.
madida, Pinna, 133.
magna, Tellina, 235.
magnifica, Venus, 249.
magnum, Cardium, 266.
magnus, Solen, 313.
major, Pectunculus variegatus, var., 293.
major, Vulsella, 88.
Malabaricus, Tapes sinuosus, var., 237.
malaccana, Lithophaga (Lithophaga), 78.
malayana, Lithophaga, 79.
malleata, Anomia, 29.
MALLETIA, 25.
Malleus, 83.
MALLEUS, 102.
malleus, Malleus, 102.
Malleus, Margaritifera, 102.
Malleus, Ostrea, 102, 104.
Malleus, Pinctada, 102.
Manillae, Callista, 221.
Manillae, Caryatis, 221.
Manillae, Circe, 221.
Manillae, Cytherea, 221.
Manillae, Dione, 221.
manillae, Maretrix (*Pitar*), 221.
manillae, Pitar, 221.
Mantellum, 119.
Margarita, 97.
Margaritifera, 97.
margaritifera, Avicula, 98.
margaritifera, Avicula (*Meleagrina*), 98.
margaritifera, Margaritifera, 98.
margaritifera, Margaritiphora, 98.
Margaritifera, Meleagrina, 98, 100.
margaritifera, Meleagrina (*Pteria*), 99.
margaritifera, Pinctada, 98.
margaritifera, Pteria, 99.
margaritiferus, Mytilus 98.
margaritiferus, Mytilus (*Meleagrina*), 98.
Margaritiphora, 97.
marginalis, Tellina, 178.
marginalis, Tellina (*Tellinella*), 179.
marica, Antigona, 254.
marica, Chione, 253.
marica, Chione (*Omphaloclathrum*) 253.
marica, Chione (Timoclea), 253.
marica, Venus, 253, 254.
marica, Venus (*Chione*), 253.
marilina, Anatina, 321.
marmorata, Circe, 230.
marmorata, Modiolaria, 75.
marmorea, Gari, 299.
marmorea, Psammobia, 299.
marmorea, Psammobia (*Gari*), 299.
marsupiale, Isognomon, 86.
marsupium, Isognomon, 86.
marsupium, Pedalion, 87.
marsupium, Perna, 86.
martensi, Arca, 33.
MARTESIA, 317.
maskatensis, Glycymeris, 66.
maxima, Abra, 199, 200.
maxima, Leguminum, 313.
maxima, Syndesmya, 199.
maxima, Tridacna, 293.
maximus, Cultellus, 312.
maximus, Cultellus (Cultellus), 313.
maximus, Solecurtus, 313.
maximus, Solen, 313.
maximus, Solen (*Cultellus*), 313.
medium, Cardium, 289.
Megaleda, 19.
Meiocardia, 149.
meleagridis, Avicula, 97.
meleagridis, Avicula (*Electroma*), 97.
meleagridis, Mytilus, 97.
meleagridis, Pteria, 97.
Meleagrina, 97.
Melina, 81.
Mendanae, Cytherea, 217.
menkei, Gafrarium, 232.
Menkei, Pinna, 134.
mera, Mactra (Mactra), 209.
mera, Trigonella, 209.
MERETRIX, 212.
meretrix, Cytherea, 212.
meretrix, Cytherea (*Meretrix*), 212.
meretrix, Meretrix, 212.
Meretrix, Venus, 212.
MESODESMA, 205.
messanensis, Nuculana (Ledella), 19, 24.
Metcalfi, Circe, 226.
metcalfi, Modiolus (Modiolus), 72.
micans, Psammobia, 196.
micans, Tellina (*Homala*), 195.
micans, Tellina (*Peronaea*), 195.
micans, Tellina (Peronidia), 195.
micans, Tellina (*Tellinella*), 195.
microlepos, Spondylus, 113.
mindanensis, Chione, 254.
mindanensis, Chione (Timoclea), 254.
mindanensis, Teredo, 318.
mindanensis, Venus (*Chione*), 254.
minor, Vulsella, 89.
minor, ? Vulsella, 90.
minuata, Lucina, 157.
minuta, Hiatella, 314.
minuta, Limopsis, 59.
minuta, Lucina (*Lentillaria*), 158.
mirabile, Cardium (*Acanthocardium*), 271.
mirabile, Cardium (*Bucardium*), 271.
mirabile, Cardium, (Ringicardium), 271.
mirabilis, Nucula (Acila), 17, 18.
miranda, Modiolaria, 75.
miranda, Musculus, 75.
*mitis, Cuspidaria (Cuspidaria), 328, 329.
mixta, Cytherea, 230.
mixta, Venus, 230.
modesta, Aloidis, 308.
modesta, Corbula, 308.
*modica, Nuculana (Thestyleda), 21, 22, 23.
Modiola, 71.

Modiolaria, 74.
MODIOLUS, 71.
modiolus, Modiolus, 71.
modiolus, Mytilus, 71.
Modiolus sp., 74.
mollis, Arca (Barbatia), 53.
mollis, Barbatia, 52.
Molluccensis, Pinna, 134.
Moltkiana, Bucardia (Meiocardia), 149.
Moltkiana, Cardita, 151.
Moltkiana, ? Cardita, 149.
Moltkiana, Chama, 149, 151.
Moltkiana, Isocardia, 149, 150, 151.
Moltkiana, Isocardia (Meiocardia), 149, 150.
Moltkiana, Meiocardia, 149.
monilifera, Venus, 251.
monilis, Aloidis, 307.
monilis, Corbula, 307.
monstrosa, Hemicardia, 285.
monstrosum, Cardium, 285.
monstrosum, Cardium (Corculum), 285.
monstrosum, Cardium (Hemicardium), 285.
monstrosum, Corculum, 285.
monstrosum, Corculum cardissa var., 285.
monstrosum, Hemicardium (Hemicardium), 285.
MONTACUTA, 171.
Moretoniensis, Clementia, 262.
morphina, Cytherea, 212.
Morphina, Meretrix, 213.
morphina, Venus, 213.
*multicarinata, Cuspidaria (Cardiomya), 332.
multicostata, Lima, 120, 121.
multilamellatus, Spondylus, 109.
multisetosus, Spondylus, 114.
multispinosum, Cardium (Acanthocardia), 271.
multispinosum, Cardium (Bucardium), 271.
multispinosum, Cardium (Isocardia), 271.
multispinosum, Cardium (Pectunculus), 271.
multispinosum, Cardium (Ringicardium), 271.
multistriata, Arca, 58.
multistriata, Limopsis, 58.
multistriata, Martesia, 317, 318.
multistriata, Pectunculina, 58.
multistriata, Pectunculus (Limopsis), 58.
multistriata, Pholas, 318.
multistriata, Pholas (Martesia), 318.
multistriata, Pectunculus, 58.
mummia, Gastrochaena, 315.
munda, Lucina (Codakia), 157.
muricata, Meleagrina, 100.
muricata, Plicatula, 115, 117.
muricata, Tellina, 190.
muscaria, Cytherea, 230.
muscaria, Venus, 230.
MUSCULUS, 74.
mutica, Pinna, 133.
mutica, Tridacna, 292.
MYADORA, 321.
Myadora, sp., 322.
Myodora, 321.
MYONERA, 334.
MYRTEA, 159.
Mysella, 171.
Mytilicardia, 142.
mytilina, Vulsella, 88.
mytiloides, Gastrochaena, 316.
mytiloides, Gastrochaena (Spengleria), 316.
mytiloides, Rocellaria (Spengleria), 315, 316.

nana, Circe, 227.
Naranio, 264.
nasuta, Lithophaga (Lithophaga), 77.
nasuta, Modiola, 77, 78.
nasutus, Lithodomus, 78.
Navicula, 31.
navicularis, Arca (Navicula) var. Linter, 34.
navigatum, Gafrarium, 227.
Neaera, 201, 327.
nebulosum, Cardium, 270.
negrosiensis, Tellina, 187.
NEILONELLA, 27.
nexilis, Cardium, 231.
nexum, Cardium, 274.
nicobaricus, Mytilus, 69.
Nicobaricus, Septifer, 70.
Nicobaricus, Solen, 313.
nicobaricus, Spondylus, 110.
niger, Lithophaga, 77.
nigra, Pinna, 134, 135.
nigra, Pinna (Atrina), 135.
nigricans, Isognomon, 82.
nigricans, Pinna, 135.
nigrina, Pinna, 135.
nimbosa, Macrocallista, 215.
*nimbosa, Nucula (Nucula), 17.
nitida, Cardita (Venericardia), 146.
nitidula, Tellina (Angulus), 193.
nitidula, Tellina (Homola), 193.
nitidula, Tellina (Tellinella), 193.
nivea, Arca, 43, 45.
Noae, Arca, 32.
noae, Arca (Navicula), 31.
nobilis, Ostrea, 130.
nocturna, Paphia, 235.
nocturna, Venus, 235.
nodulosa, Arca, 52.
nodulosa, Venus, 247.
norma, Isognomon, isognomum, var. 84.
normalis, Malleus, 104.
norvegicum, Cardium (Laevicardium), 261.
Notocallista, 215,
nova-caledoniensis, Axinaea, 64.
novohollandiae, Perna, 83.
nucleus, Nucula, 13.
NUCULA, 13.
NUCULANA, 13, 18, 19, 27.
Nuttali, Pinna, 139.
Nympha, 212.

obesa, Batissa, 176.
obessa, Cypricardia, 148.
obessa, Glossocardia, 148.
obliqua, Limopsis, 61.
obliqua, Nucula, 13.
obliqua, Perna, 84.
obliquata, Arca, 47.
obliquata, Pitar, 223.
oblonga, Arca, 37.
oblonga, Barbatia, 42.
oblonga, Circe, 225.
oblonga, Lutraria, 211.
oblongus, Azor, 311.
oblongus, Solecurtus, 311.
obscura, Donax, 202.
obsoleta, Cytherea, 244.
obtusa, Arca, 47.
obtusa, Arca (Barbatia), 47.
obtusa, Barbatia, 47.
obtusoides, Arca (Barbatia), 47.
occa, Avicula, 99.
occa, Avicula (Meleagrina), 100.
occa, Meleagrina, 100.
ocellatus, Spondylus, 111.
ocellatus, Spondylus hystrix, var., 111, 112.
olar, Anatina, 321.

olorina, Anatina, 321.
Omphaloclathrum, 246.
Opisocardium, 287.
orbicularis, Codakia, 155.
orbicularis, Glycymeris, 61.
orientalis, Cultellus, 313.
orientalis, Lima, 125.
orientalis, Lima (Limaria), 125.
orientalis, Radula (Mantellum), 125.
Orixa, 199.
ornata, Circe (Lioconcha), 219.
ornata, Divaricella, 160.
ornata, Gari, 299.
ornata, Gari (Amphichaena), 299.
ornata, Lioconcha, 219.
ornata, Lucina, 160.
ornata, Lucina (Cyclas), 160.
ornata, Lucina (Divaricella), 160.
ornata, Psammobia, 299.
ornata, Psammobia (Gari), 299.
ornata, Venus, 219.
ornatissima, Lucina, 160.
ornatum, Fragum (Ctenocardia), 278.
Ostrea, 81, 117.
OSTREA, 129.
ovalis, Actinobolus, 146.
ovalis, Cardita, 146.
ovalis, Cardita (Venericardia), 146.
ovalis, Dosinia (Austrodosinia), 246.
ovalis, Venericardia, 146.
ovalis, Venericardia (Cardites), 146.
ovata, Chione (Timoclea), 252.
ovata, Meleagrina, 97.
ovata, Pteria (Electroma), 97.
ovata, Vulsella, 90.
ovum, Lucina, 154, 166.
ovum, Lucina edentula, var., 154.
ovum, Lucina (Thyasira), 154.

*pachydonta, Nucula (Nucula), 16.
pachydonta, Nucula (Nucula), 17.
paeta, Circe, 226.
paeta, Cytherea (Circe), 226.
pallida, Cyrena, 174.
pallida, Gari, 302.
pallida, Gari (Gari), 303.
pamela, Dentilucina (Dentilucina), 162.
Pandora, 322.
PAPHIA, 233.
Paphia, 228.
papilionacea, Avicula, 97.
papilionacea, Pullastra, 234.
papilionacea, Tapes, 234.
papilionacea, Tapes (Paratapes), 234.
papilionacea, Venus, 234.
papilionacea, Venus (Tapes-Textrix), 234.
papyracea, Clementia, 262.
papyracea, Lyonsiella, 325.
papyracea, Venus, 262.
Papyridea, 266.
*parallelodonta, Nuculana (Poroleda), 23.
Paratapes, 233.
parva, Arca, 48.
parva, Arca (Barbatia), 48.
parva, Arca (Barbatia), 48.
parva, Barbatia (Acar), 48.
parva, Byssoarca, 48.
*patagiata, Tellina (Tellina), 182.
patibulum, Perna, 83.
paucistriata, Myonera, 334.
paula, Montacuta, 172.
paula, Montacuta (Mysella), 172.
paula, Montacuta (Tellimya), 172.
paula, Pinthina, 172.
paulucciana, Arca (Barbatia), 45.
Paulucciana, Barbatia 45.
Pecchiolia, 325.
pectinata, Chama, 155.
pectinata, Circe, 228, 231.
pectinata, Circe (Crista), 229.
pectinata, Cytherea, 228.
pectinata, Cytherea (Crista), 229.
pectinata, Pinna, 137, 138.
pectinata, Pinna (Atrina), 137.
pectinata, Venus, 228, 231.
pectinatum, Gafrarium, 228.
pectiniforme, Cardium, 266.
pectiniformis, Glycymeris, 62.
pectiniformis, Pectunculus, 61.
Pectunculina, 57.
pectunculoides, Arca (Bathyarca), 55.
Pectunculus, 61.
pectunculus, Arca, 61.
pectunculus, Glycymeris, 62,
pectunculus, Pectunculus, 62.
peculiaris, Pythina, 172.
Pedalion, 81.
Pella, Nucula, 19.
pellucida, Dione, 223.
*pelseneeri, Cardita (Venericardia), 147.
*pelseneeri, Montacuta, 172.
penguin, Pinctada, 93.
penguin, Pteria, 93.
penna, Pinna, 137.
penna, Pinna (Atrina) 137.
pennata, Gari, 302.
*pergranosa, Poromya (Poromya), 326.
peregrinum, Trachycardium, 267.
Periglypta, 247.
Perlamater, 97.
Perna, 81.
perna, Isognomon, 85.
perna, Melina, 85.
perna, Ostrea, 84, 85.
perna, Perna, 85.
pernula, Nuculana, 18, 19.
peronatum, Cardium (Ctenocardia), 277.
peronatum, Cardium (Ctenocardia); 278.
Peronidia, 178, 194, 195.
*persculpta, Cuspidaria (Cardiomya), 332.
personata, Circe, 224.
perviridis, Avicula, 99.
perviridis, Avicula (Meleagrina), 100.
pes-asininus, Spondylus, 109.
petechialis, Cytherea, 212.
petechialis, Meretrix, 213.
petechialis, Venus, 213.
petersi, Arca, 43.
petersi, Arca (Barbatia), 42.
petersi, Barbatia, 42.
PETRICOLA, 264.
Petroselinum, Spondylus, 109.
Phacoides, 161.
Pharaonis, Arca, 38.
pharaonis, Mytilus, 66.
Pharus, 311.
phasianella, Callista, 215.
phasianella, Cytherea, 215.
phasianella, Dione, 215.
phasianella, Macrocallista, 215.
phasianella, Venus, 215.
phasianella, Venus (Callista), 215.
philippi, Chemelaea, 238.
Philippi, Limopsis, 58.
Philippi, Tapes, 238.
philippiana, Arca, 40.
Philippiana, Arca (Scapharca), 39.
Philippiana, Loripes, 154.
Philippiana, Lucina, 154.
Philippiana, Lucina edentula var., 154.
Philippiana, Scapharca, 39.
Philippii, Chione, 238.
Philippii, Chione (Chamelaea), 238.
Philippinarum, Cytherea, 217.
philippinarum, Cytherea (Dione), 217.

Philippinarum, Dione (*Dione*), 217.
philippinarum, Hysteroconcha (Lamelliconcha), 217.
philippinarum, Lutraria, 211.
Philippinarum, Meretrix, 217.
Philippinarum, Meretrix (*Dione*) 217.
philippinarum, Modiola, 72.
philippinarum, Modiolus (Modiolus), 72.
philippinarum, Paphia, 242.
philippinarum, Paphia (Amygdala), 242.
philippinarum, Perna, 72.
philippinarum, Pinna, 134.
Philippinarum, Venus (*Cytherea-Dione*), 217.
Philippinensis, Pinna, 133.
philippinensis, Scintilla, 168.
philippinensis, Cuspidaria (Rhinoclama), 328.
PHOLADIDEA, 317.
pholadiformis, Vulsella, 89, 90.
Phorus, 311.
Phylloda, 178.
pica, Cardita, 145.
pica, Cardita (Arcinella), 145.
pica, Lazaria, 145.
pica, Mytilicardia, 145.
picta, Circe, 219.
picta, Circe (*Lioconcha*), 219.
picta, Crassatella, 140.
picta, Cytherea, 219.
picta, Cytherea (*Lioconcha*), 220.
picta, Meretrix (*Lioconcha*), 220.
picta, Venus, 219.
picta, Venus (*Lioconcha*), 220.
pictus, Crassatellites, 141.
pila, Lucina, 154.
pila, Lucina edentula, var., 154.
pilosus, Mytilus, 70.
pilula, Arca, 40.
pilula, Arca (Anadara), 40.
pilula, Arca (*Anomalocardia*), 40.
pilula, Arca (*Cunearca*), 40.
pilula, Arca (*Scapharca*), 40.
*pilula, Lysonsiella, 325.
pilula, Scapharca, 40.
PINCTADA, 97.
Pinctada, 90.
PINNA, 133.
Pinna, s.s. 134.
pistachia, Arca, 48.
pisum, Lucina, 163.
pisum, Scintilla, 169.
PITAR, 221.
Pitar, 216.
Pitaria, 221.
PLACENTA, 30.
plana, Davila, 205.
plana, Mesoderma, 205.
planum, Mesoderma (*Davila*), 205.
planus, Cultellus, 313.
planus, Solen, 313.
plebia, Circe, 226.
plebia, Cytherea, 226.
plebia, Cytherea (*Circe*), 226.
plebja, Cytherea, 226.
plenilunium, Anomia, 29.
plicata, Acar, 50.
plicata, Arca, 50.
plicata, Arca (Acar), 50.
plicataria, Mactra (Mactrinula), 207.
PLICATULA, 115.
Plicatula sp. 117.
plicatum, Ostreum, 131.
plicatus, Plicatula, 115.
polita, Davila, 205.
polita, Galeomma, 167, 168.
polita, Lioconcha, 218.
polita, Scintilla, 168.
polita, Venus, 218.
polonica, Tudes, 102.
polonicum, Ephippium, 30.
ponderosa, Crassatella, 140.
ponderosa, Cytherea, 212.
ponderosa, Meretrix, 213.
porcata, Venus, 237.
Poroleda, 19.
POROMYA, 326.
praestans, Xylophaga, 317.
Pratulum, 266.
pretiosa, Arcopagia, 189.
pretiosa, Tellina (*Arcopagia*), 188, 189.
pretiosa, Tellina (*Linearia*), 189.
pretiosa, Tellina (Pseudarcopagia), 189, 190.
Pristis, 187.
pristis, Tellina (Arcopagia), 187.
*procumbens, Nuculana (Nuculana), 20.
producta, Tellina, 196.
proficua, Semele, 198.
prostrata, Dosinia (*Austrodosinia*), 246.
Protapes, 233.
Psammacoma, 197.
Psammobia, 193, 298.
Pseudarcopagia, 178.
Pseudochama, 295.
Pseudochama, 297, 298.
pseudomarica, Venus, 255.
Pseudoneaera, 328.
PTERIA, 90.
Pteria, 95.
pubescens, Artemis, 245.
pubescens, Cytherea, 245.
pubescens, Dosinia (Austrodosinia), 245.
pudica, Tellina, 184.
pudica, Tellina (Arcopagia), 184.
puerpera, Antigona, 248.
puerpera, Chione (*Omphaloclathrum*), 249.
puerpera, Cytherea, 248.
puerpera, Dosinia, 248.
puerpera, Omphaloclathrum, 248.
puerpera, Venus, 246, 248.
puerpera, Venus (*Antigona*), 249.
puerpera, Venus (*Omphaloclathrum*), 249.
pulchella, Neaera (Cardiomya), 331.
pulchella, Psammobia, 301.
pulcherrima, Gari (Gari), 300.
pulcherrima, Psammobia, 300.
pulcherrima, Psammobia (*Amphichaena*), 300.
pulcherrima, Psammobia (*Gari*), 300.
pulcherrima, Tellina, 180.
pulcherrima, Tellina (Tellina), 180.
pulcherrima, Tellina (*Tellinella*), 180.
pulchrum, Cardium, 281.
pulchrum, Cardium (*Cerastoderma*), 281.
pulchrum, Cardium (*Fulvia*), 281.
pulchrum, Cardium (*Papyridea*), 281.
pulchrum, Laevicardium, 281.
pulicaris, Cytherea, 230.
pulicaris, Venus, 230.
punctata, Codakia, 155.
punctata, Cytherea, 155.
punctata, Lentillaria, 155.
punctata, Lucina, 155.
punctata, Lucina (*Codakia*), 155.
punctata, Lucina (*Lentillaria*), 156.
punctata, Venus, 155.
punctatus, Loripes (*Codakia*), 156.
punicea, Tapes, 241.
punicea, Tapes (*Amygdala*), 241.
punicea, Tapes (*Cuneus*), 241.
punicea, Venus (*Tapes-Amygdala*), 241.
pura, Tellina (*Peronaea*), 192.
pusilla, Arca, 50.

pusilla, Arca (*Barbatia*), 50.
pusilla, Barbatia (*Acar*), 51.
putinatum, Cardium, 232.
PYTHINA, 170.

*quadrata, var. Dentilucina (Bellucina) hedleyi, 164.
quadrata, Myadora, 322.
quadrilatera, Arca (Fossularca), 53.
quadrimaculata, Lucina, 160.
quadrimaculata, Lucina (*Cyclas*), 160.
quadrisulcata, Lucina (*Divaricella*), 160.

radians, Dentilucina (*Callucina*), 161.
radians, Donax, 203, 204.
radians, Spondylus, 110.
radiata, Anomalocardia, 39.
radiata, Arca, 39.
radiata, Arca (*Anadara*), 39.
radiata, Arca (*Anomalocardia*), 39.
radiata, Avicula, 99.
radiata, Crassatella, 141.
radiata, Crassatellites, 141.
radiata, Donax, 204.
radiata, Gari (Gari), 300.
radiata, Hiatula (*Psammotaea*), 300.
radiata, Meleagrina, 100.
radiata, Psammobia, 300.
radiata, Psammobia (*Psammocola*), 300.
radiata, Tellina, 178.
radiata, Venus, 234.
radiatum, Calopodium (Kennerlia), 323.
radiatus, Donax, 202.
Radula, 119.
radula, Arca (Barbatia), 48.
ramosa, Modiola, 67.
ramsayi, Nuculana (Thestyleda) 19, 22, 23.
ramulosa, Lucina, 157.
ramulosa, Lucina (*Codakia*), 157.
Ranella, Circe, 231.
ranella, Cytherea, 231.
rathbuni, Lima (Acesta), 127.
Rathbuni, Lima (*Callolima*), 127.
recens, Arcoperna, 81.
recognita, Chione (*Omphaloclathrum*), 255.
recognita, Chione (Timoclea), 254.
recognita, Venus (*Chione*), 254.
reeveanum, Cardium, 258.
Reevi, Codakia, 158.
reevi, Glycymeris, 64.
Reevi, Lucina, 157.
Reevi, Lucina (*Lentillaria*), 158.
Reevi, Mactra, 208.
Reevi, Pectunculus, 64.
reevi, Psammobia, 302.
Reevi, Psammobia (*Heteroglypta*) 301.
Reevi, Tridacna, 293.
Reeviana, Avicula (*Meleagrina*) 101.
regia, Pinna, 133.
regius, Spondylus, 108.
regula, Malleus, 105, 106.
regula, Malleus, var. *decurvata*, 106.
regula, Ostrea, 105.
regula, Pinctada, 105.
regulare, Cardium, 266.
regularis, Chione, 238.
Reniella, 88.
reticula, Gafrarium, 250.
reticulata, Acar, 50.
reticulata, Antigona, 249, 251.
reticulata, Arca, 50.
reticulata, Avicula, 92.
reticulata, Chione (*Omphaloclathrum*), 250.
reticulata, Cytherea, 251.
reticulata, Dosinia, 250.
reticulata, Nuculana (Nuculana), 20.
reticulata, Omphaloclathrum, 250.
reticulata, Tellina, 192.
reticulata, Venus, 247, 248, 249.
reticulata, Venus (*Antigona*), 250.
reticulata, Venus (*Omphaloclathrum*), 250.
reticulatum, Cordiforme, 248.
Reticulatus, Pectunculus, 219.
retroversa, Chione, 259.
retusa, Arca, 32.
retusa, Hemicardia (*Lunulicardia*), 288.
retusa, Lunulicardia, 287, 288.
retusum, Cardium, 287.
retusum, Cardium (*Hemicardium*), 287.
retusum, Hemicardium, 288.
Retzii, Gastrochaena, 316.
rex, Solamen, 80, 81.
Rhinoclama, 328.
Rhinomya, 328.
rhodon, Tellina (Angulus), 194.
rhodon, Tellina (*Homala*), 194.
rhodon, Tellina (*Tellinella*), 194.
rhomboides, Pectunculus, 272.
rhomboides, Tellina (Angulus), 192.
rhomboides, Tellina (*Donacilla*), 192.
rhomboides, Tellina (*Exotica*), 193.
rhomboides, Tellina (*Fabulina*), 192.
rhomboides, Tellina (*Moera*), 192.
rhomboides, Tellina (*Tellina*), 193.
rigidum, Cardium, 277.
rimosa, Tapes, 240.
rimosa, Venus, 240.
ringens, Cardium (Ringicardium), 266.
Ringicardium, 266.
*robsoni, Nuculana (Nuculana), 20.
robusta, Arcopagia, 183.
robusta, Tellina, 183.
robusta, Tellina (Arcopagia), 183.
ROCELLARIA, 315.
Rochefortia, 17.
rodatzi, Arca, 46.
rodatzi, Arca (*Barbatia*), 47.
rodatzi, Barbatia, 47.
rosea, Arca, 50.
rosea, Psammobia, 301.
roseotincta, Callista, 216.
roseotincta, Cytherea (*Callista*), 216.
roseotincta, Macrocallista, 216.
roseotincta, Meretrix (*Callista*), 216.
rostrata, Anatina, 320.
rostrata, Laternula, 320.
rostrata, Nucula, 13.
rotundata, Tapes, 234.
rotundata, Venus, 234.
rubicunda, Gari, 299.
rubicunda, Gari (*Amphichaena*), 299.
rubicunda, Psammobia, 299.
rubicunda, Psammobia (Gari), 299.
rubrum, Fragum, 272.
rudis, Pinna, 133, 135.
rudis, Vulsella, 90.
Ruditapes, 233.
rufa, Cardita (Venericardia), 146.
rugata, Cuspidaria (Rhinoclama) 333.
rugata, Papyridea, 282.
Rugatum, Cardium, 282.
rugatum, Cardium, (*Papyridea*), 282.
rugifera, Codakia, 159.
*rugifera, Nucula (Nucula), 15.
rugosa, Dentilucina (Bellucina), 163.
rugosa, Donax, 202.
rugosa, Sanguinolaria, 306.
rugosum, Cardium, 267.
rugosum, Trachycardium, 267.
rugulosa, Psammobia, 304.
rumphii, Modiolus, 72.
Rupellaria, 263.
Rupelli, Chama, 296, 297.

Saccata, Pinna, 138.

saccata, Pinna (Atrina), 139.
saccata, Pinna (Streptopinna), 138.
Saltorum, Mactra, 207.
sanguineomaculata, Isocardia, 150.
Savignyi, Cytherea, 228.
Savygnyi, Cytherea (Crista), 229.
Savignyi, Diplodonta, 165.
Savignyi, Meleagrina, 100.
saxatilis, Pecten, 33.
SAXICAVA, 314.
scabra, Antigona, 257.
scabra, Arca, 52.
scabra, Chione (Timoclea), 255, 257.
scabra, Dosinia, 244.
scabra, Lima (Ctenoides), 122.
scabra, Lima (Lima), 122.
scabra, Psammobia, 299.
scabra, Tellina, 298.
scabra, Venus, 257.
scabra, Venus (Chione), 257.
scabra, Venus (Timoclea), 257.
scabriuscula, Dosinia (Austrodosinia), 246.
*scalata, Nuculana (Thestyleda), 22.
scandularis, Chione (Timoclea), 255.
scandularis, Venus, 255.
scapha, Arca, 35.
scapha, Arca (Anadara), 36.
scapha, Chametrachaea, 292.
Scapharca, 35.
scaphoides, Aloides, 310.
scheepmacheri, Solecurtus, 311.
scheepmakeri, Avicula (Meleagrina), 100.
Scheepmakeri, Macha, 311.
scheepmakeri, Meleagrina, 101.
scheepmakeri, Pinctada, 100.
*schepmani, Gari (Gari), 302.
*schepmani, Neilonella, 27.
Scintilla, 167, 170.
SCINTILLA, 168.
Scintilla sp., 170.
scripta, Circe, 223.
scripta, Cytherea, 223.
scripta, Venus, 222.
scriptum, Gafrarium, 225.
scriptus, Pectunculus, 223.
sculpta, Venus, 251.
sculptilis, Arca, 53.
sculptilis, Arca (Barbatia), 53.
sculptilis, Arca (Fossularca), 53.
secunda, Tellina (Homala), 192.
securis var. *elongata, Modiola*, 71.
sella, Anomia, 30.
sella, Placenta, 30.
sella, Placenta (Ephippium), 30.
sella, Placuna, 30.
sella, Placuna (Placenta), 31.
sella, Placuna (Placunema), 31.
sella, Placunema, 31.
SEMELE, 198.
semiaurita, Margaritifera, 96.
*semicostata, Cuspidaria (Cardiomya), 333.
semidecussata, Tapes, 241.
semperina, Lucina, 163.
senegalensis, Brachidontes (Hormomya), 67.
senegalensis, Mytilus, 66.
Septifer, 66.
serra, Pinna, 138.
serrata, Pinna, 137.
*serraticosta, Spondylus, 114.
serratum, Cardium, 279.
Serrula, 202.
serrulata, Avicula, 91.
serrulata, Pteria, 92.
setosa, Mactra, 208.
*sewelli, Cardium (Trachycardium), 268.
siamensis, Tellina (Arcopagia), 187.
siamensis, Tichogonia (Septifer), 68.
*sibogae, Solamen, 81.
sibogae, Pteria, 90.
*sibogae, Pteria, 95.
*sibogaensis, Nuculana (Poroleda), 23.
*sibogai, Abra, 200.
*sibogai, Arca (Bathyarca), 55.
*sibogai, Cuspidaria (Cardiomya), 331.
*sibogai, Gari (Gari), 303.
*sibogai, Isoconcha, 173.
*sibogai, Lima (Limatula), 128.
*sibogai, Montacuta (Mysella), 172.
*sibogai, Nuculana (Nuculana), 19.
sieboldi, Artemis, 243.
sieboldi, Dosinia (Austrodosinia), 243.
silicula, Lithophaga, 79.
silicula, Modiola, 79.
silicula, Tellina, 192.
silicula, Tellina (Moera), 192.
similis, Clementia, 262.
simillima, Lima (Limatula), 128.
simplex, Gari (Gari), 301.
simplex, Psammobia, 301.
simplex, Tellina (Peronaeoderma), 185.
sinensis, Arca, 47.
sinensis, Margarita, 98.
singaporensis, Cuspidaria (Cardiomya), 331, 332.
singaporensis, Neaera, 332.
sinuosa, Cyrena, 175.
sinuosa, Paphia, (Protapes), 237.
sinuosa, Tapes, 237.
sinuosa, Tapes (Protapes) 237.
sinuosa, Tapes (Pullastra), 237.
sinuosa, Tapes (Textrix), 237.
sinuosa, Venus, 237.
siphonata, Anatina, 320.
smaragdina, Avicula, 97.
smaragdina, Pteria (Electroma), 96.
*smithi, Lyonsiella, 325.
*smithi, Montacuta, 171.
SOLAMEN, 80.
SOLECURTUS, 311.
Solenella, 25.
soleniforme, Cardium (Papyridea), 266.
Solenocurtus, 311.
solenoides, Lutraria, 211.
solida, Arca (Fossularca) afra, var., 54.
*solidissima, Vesicomya, 152.
*solidula, Cuspidaria (Cuspidaria), 330.
solidus, Azor, 311.
solidus, Solecurtus, 311.
solitaria, Malleus, 107.
sowerbyi, Lima, 120.
spatula, Nuculana (Poroleda), 23.
Spengleria, 315.
spengleri, Perna, 87.
spengleri, Siliqua, 87.
spinifera, Myrtea, 159.
SPONDYLUS, 107.
spongiarum, Vulsella, 89, 90.
squalida, Mactra, 207.
squamosa, Anomalocardia (Anomalodiscus), 260.
squamosa, Arca, 50.
squamosa, Barbatia, 51.
squamosa, Chama, 290.
squamosa, Chametrachaea, 291.
squamosa, Cryptogramma, 261.
squamosa, Cytherea, 261.
squamosa, Gari (Grammatomya), 298, 304.
squamosa, Gari (Heteroglypta), 305.
squamosa, Lima, 120.
squamosa, Psammobia, 304.
squamosa, Psammobia (Amphichaena), 305.
squamosa, Radula, 120.

squamosa, Tridacna, 290.
squamosa, Venus, 260.
squamosa, Venus (*Triquetra*), 261.
squamosissima, Pinna, 137.
squammulosa, Tellina, 181.
stigmosa, Arca, 42, 43.
stigmosa, Arca (*Barbatia*), 42.
stigmosa, Barbatia, 42.
stoliczkana, Glossocardia, 148.
Strangei, Atrina, 136.
Strangei, Clementia, 262.
strangei, Nucula (Nucula), 16.
strangei, Pinna, 134, 136.
strangei, Pinna (Atrina), 136, 137.
Strangei, Tellina, 190.
Streptopinna, 133, 138.
striata, Chama, 293.
striata, Chione, 238.
striata, Crassatella, 206.
striata, Erycina, 206.
striata, Eryx, 206.
striata, Mactra, 206.
striata, Martesia, 317.
striata, Mesodesma (Atactodea), 206.
striata, Paphia, 206.
striata, Petricola, 264.
striata, Pullastra, 238.
striata, Tapes (*Hemitapes*), 238.
striata, Venus, 237.
striata, Venus (*Amygdala*), 238.
striata, Venus (*Hemitapes*), 238.
striata, Venus (*Tapes*), 238.
striatina, Scintilla, 168.
striatula, Arcopagia, 185.
striatula, Tellina, 185.
striatula, Tellina, (*Tellinella*), 185.
striatulum, Cardium, 275.
striatulus, Brachidontes (Hormomya), 68.
striatus, Hemitapes, 238.
striatus, Musculus, 45.
striatus, Pectunculus, 292.
subaspera, Cardita, 143.
subauriculata, Lima (Limatula), 191.
subelliptica, Macoma, 187.
subelliptica, Tellina (*Arcopagia*), 187.
subglobosa, Diplodonta, 166.
subnodulosa, Chione (*Omphaloclathrum*), 256.
subnodulosa, Chione (*Timoclea*), 255.
subnodulosa, Venus, 255.
suborbicularis, Kellia, 167.
subquadrata, Aloidis, 307.
subquadrata, Corbula, 307.
subquadrata, Cytherea, 224.
subramosa, Modiola, 67.
subramosa, Modiola (*Brachidontes*), 67.
subramosa, Perna (*Brachidontes*), 67.
subramosus, Brachidontes, 67.
subretusa, Cardissa (*Lunulicardia*), 288.
subretusa, Hemicardia (*Lunulicardia*), 288.
subretusa, Lunulicardia, 288.
subretusum, Cardium, 288.
subretusum, Opisocardium, 288.
subrosea, Tellina (*Angulus*), 192.
subrostrata, Anatina, 319.
subrostrata, Venus, 247.
subrubicunda, Tellina, 178.
subrugosum, Cardium (Trachycardium), 268.
substriata, Montacuta, 171.
subsulcatus, Brachidontes (Hormomya), 68.
sugillata, Avicula, 101.
sugillata, Circe, 224.
sugillata, Meleagrina, 101.
sugillata, Pinctada, 101.
sulcata, Aloidis, 307.
sulcata, Circe, 226.
sulcata, Cytherea, 226.
sulcata, Cytherea (*Circe*), 226.
sulcata, Cytherea (*Lioconcha*), 226.
sulcata, Perna, 85.
sulcata, Venus, 226.
sulcatina, Chione, 218.
sulcatina, Circe, 218.
sulcatina, Circe (*Lioconcha*), 218.
sulcatina, Cytherea, 218.
sulcatina, Lioconcha, 218.
sulcatina, Meretrix (*Lioconcha*), 219.
sulcatina, Venus, 218.
sulcatus, Brachidontes, 66.
superba, Nucula (Nucula), 13.
symbolicum, Cardium (*Ctenocardia*), 266, 276, 278.
symbolicum, Fragum (*Ctenocardia*), 276.
symmetrica, Arca, 53.
symmetrica, Arca (*Barbatia*), 54.
symmetrica, Arca (Fossularca), 54.
symmetrica, Barbatia, 54.
Syndesmya, 199.
Syndosmya, 199.

Taheitensis, Corbula, 308.
taitensis, Aloidis, 308.
taitensis, Corbula, 308.
tanaonensis, Teredo, 310.
Tapes, 233.
Taras, 164.
Tasmanica, Anatina, 321.
Tasmanica, Vulsella, 90.
tegulata, Avicula, 101.
tegulata, Margaritifera, 101.
tegulata, Meleagrina, 101.
tegulata, Pinctada, 101.
tegulatum, Hemicardium, 273.
Tellimya, 167.
TELLINA, 177.
Tellina, 195.
tellina, Gafrarium, 250.
tenebrosa, Batissa, 176.
tenella, Arca, 52.
tenella, Arca (Acar), 52.
tenella, Arca (*Barbatia*), 52.
tenella, Barbatia, 52.
tenera, Lima, 122.
tenera, Lima (*Ctenoides*), 122.
tenera, Macoma, 197.
tenera, Mactra, 209.
tenera, Radula (*Ctenoides*), 122.
tenera, Spisula, 210.
tenerum, Cardium, 282.
Tennisoni, Nucula, 13.
tenuicostatum, Cardium (Laevicardium), 281.
tenuicostatus, Axinaea (*Pectunculus*), 64.
tenuicostatus, Glycymeris, 64, 65.
tenuicostatus, Pectunculus, 64.
tenuis, Abra, 199.
TEREDO, 318.
teres, Lithodomus, 77.
teres, Lithophaga (Lithophaga), 77.
teres, Lithophagus, 77.
teres, Modiola, 77.
tetragona, Arca, 32.
tetragona, Isocardia, 151.
tetragona, Isocardia (Meiocardia), 151.
textile, Paphia, 240.
textile, Paphia (Paratapes), 233, 239.
textile, Tapes, 239.
textile, Tapes (*Amygdala*), 240.
textile, Tapes (*Textrix*), 239.
Textile, Venus, 239.
textrix, Tapes, 239.
textrix, Tapes (*Paratapes*), 239.
textrix, Venus, 239.
texturata, Tellina, 192.
texturata, Tellina (*Homala*), 192.

thaumasia, Cuspidaria (Pseudoneaera), 328, 333.
thaumasia, Pseudoneaera, 333.
THEORA, 201.
Thestyleda, 19, 22.
thetidis, Cardium, 275.
thetidis, Cardium (Pratulum), 266.
Thetis, 326.
Thiara, Venus, 258.
thiara, Venus, 259.
thymares, Tellina, 187.
Thyreopsis, 167.
tiara, Anaites, 259.
tiara, Chione (Clausinella), 259.
tiara, Cytherea, 260.
tiara, Venus, 259.
tiara, Venus (*Anaitis*). 259.
tigerina, Codakia, 156.
tigerina, Codokia, 157.
tigerina, Cytherea, 156.
tigerina, Lioconcha, 220.
tigerina, Lucina (*Lentillaria*), 156.
Tigerina, Lucina, interrupta, var., 159.
tigerina, Venus, 156.
tigrinus, Malleus, 107.
Timoclea, 252.
timorensis, Scintilla, 170.
*tomlini, Cuspidaria (Cuspidaria), 330.
*tomlini, Lima (Lima), 123.
tomlini, Pteria, 90.
*tomlini, Pteria, 94.
*tomlini, Xylophaga, 317.
tongana, Meleagrina, 97.
toreuma, Antigona, 252.
toreuma, Antigona (Clausina), 251.
toreuma, Chione, 252.
toreuma, Chione (*Omphaloclathrum*), 252.
toreuma, Cytherea, 252.
toreuma, Venus, 251.
toreuma, Venus (*Ventricola*), 252.
torresi, Cardium (*Fragum*), 275.
torresi, Cardium (Pratulum), 275.
tortuosa, Arca, 31.
townsendi, Ostrea, 133.
townsendi, Ostrea (*Alectryonia*), 132.
Trachicardium, 266.
tranquebarensis, Perna, 84.
transcendens, Cardium (Trachycardium), 269.
*translatum, Cardium (Ctenocardia), 277.
transversa, Arca, 35.
trapezia, Arca, 38.
trapezia, Cardita (Glans), 147.
trapezina, Arca, 43.
trapezina, Arca (*Barbatia*), 42.
trapezina, Barbatia, 42.
Trapezium, 148.
triangularis, Pteria, 90.
*triangularis, Pteria, 94.
tricenicosta, Arca (Anadara), 39.
TRIDACNA, 290.
trigona, Circe, 225.
Trigonella, 207.
trigonum, Pinna, 133.
tripartita, Gari, 304.
*tripartita, Malletia, 26.
tripartita, Psammobia, 304.
tripartita, Psammobia (*Amphichaena*), 304.
Triquetra, 260.
tristis, Chione, 238.
tristis, Paphia, 238.
tristis, Venus, 237.
trita, Vulsella, 88, 90.
trochilus, Avicula, 92, 93.
Troscheli, Septifer, 68.
truncata, Anatina, 320.
truncata, Byssoarca, 33.
truncata, Himantopoda, 105.
truncatula, Tellina (*Homala*), 195.
truncatula, Tellina (Peronidia), 194, 195.
truncatula, Tellina (*Tellinides*), 195.
truncatulus, Tellinides, 195.
Tudes, 102.
tumens, Pitar, 221.
tumidum, Gafrarium, 230, 231.
tunicata, Aloidis, 310.
tunicata, Corbula, 310.
turgida, Cyrena, 175.
turtoni, Galeomma, 167.
Tychocardia, 149.
typica, Petricola (Choristodon), 264.

umbilicata, Cardita, 145.
umbilicata, Mytilicardia, 145.
umbonata, Arca, 34.
undatina, Circe, 224.
undatina, Cytherea, 223.
undulata, Chione, 241.
undulata, Paphia (*Paratapes*), 240, 241.
undulata, Pullastra, 240.
undulata, Tapes, 240.
undulata, Tapes (*Amygdala*), 241.
undulata, Tapes (*Paratapes*), 240.
undulata, Venus, 239, 240.
unedo, Bucardium, 273.
unedo, Cardium (Fragum), 266, 272.
unedo, Cardium (*Hemicardium*), 272.
unedo, Fragum, 272.
unedo, Hemicardium, 273.
unedo, Hemicardium (*Fragum*), 273.
ungulata, Tridachnes, 294.
unicolor, Cardium (*Trachycardium*), 270.
Unionium, 97.
Ursina, Tridachna, 294.

valsella, Ostrea, 105.
varia, Avicula (*Meleagrina*), 100.
variabilis, Brachidontes, 67.
variabilis, Brachidontes (Hormomya), 66, 67.
variabilis, Latona, 202.
variabilis, Mytilus, 66.
variabilis, Mytilus (*Aulacomya*), 66.
varicosus, Musculus, 75.
variegata, Actinobulus, 143.
variegata, Artemis, 244.
variegata, Cardita, 143.
variegata, Cardita (Arcinella), 143.
variegata, Dosinia, 244.
variegata, Cardita (*Mytilocardia*), 143.
variegata, Mytilocardia, 143.
variegata, Paphia (*Amygdala*), 241, 242, 243.
variegata, Tapes, 241.
variegata, Tapes (*Amygdala*), 242.
variegata, Tapes (*Cuneus*), 241.
variegata, Venus (*Tapes-Amygdala*), 241.
variegatus, Cuneus, 241.
variegatus, Tapes (*Ruditapes*), 242.
velata, Arca, 43.
Venericardia, 142.
veneriformis, Saxicava, 314.
VENERUPIS, 263.
ventricosa, Arca (Navicula), 33.
ventricosa, Navicula, 33.
ventricosa, Nuculana (Nuculana), 21.
Venus, 246.
venusta, Montacuta, 172.
vermiculata, Venus, 237.
vermiculosa, Chione, 238.
vermiculosa, Venus, 237.
vernicosa, Tapes, 240.
verrucosa, Antigona (Clausina), 247

verrucosa, Tellina, 180.
verrucosa, Tellina (Tellina), 180.
verrucosa, Tellina (*Tellinella*), 180.
verrucosa, Venus, 215.
VERTICORDIA, 323.
VESICOMYA, 152.
vespertilio, Perna, 83.
vespertina, Pinna, 133.
vespertinus, Gari (Gobraeus) 298.
vexillum, Pinna, 135.
vexillum, Pinna (Atrina), 134, 135.
victor, Cardium (Ctenocardia), 278.
victor, Hemicardium (*Fragum*), 278.
victoriae, Spondylus, 114.
victoriae, Spondylus, var. *wrightianus*), 114.
violacea, Batissa, 176.
violacea, Circe, 223.
violacea, Cyclas, 176.
violacea, Cyrena, 176.
violascens, Tapes, 242.
virgata, Pinna, 133.
virgata, Tellina, 178.
virgata, Tellina (*Eutellina*), 179.
virgata, Tellina (Tellina), 178, 179.
virgata, Tellina (Tellinella, 179.
virgineum, Cardium, 282.
virgineus, Pecten, 35.
virgo, Cardium, 276.
virleti, Ostrea, 130.
Volsella, 71.
volucris, Arca, 33.
vulgaris, Bucardia (*Meiocardia*), 150.
vulgaris, Gari, 298.
vulgaris, Himantopoda, 102.
vulgaris, Isocardia, 150.
vulgaris, Isocardia (Meiocardia), 150.
vulgaris, Isocardia (*Meiocardia*) var. *Lamarcki*, 151.
vulgaris, Malleus, 102.
vulgaris, Margaritifera, 100.
vulgaris, Meiocardia, 150.
vulgaris, Ostrea, 103.
vulgaris, Perlamater, 99.
vulgaris, Pinctada, 99.
vulgaris, Pteria (*Meleagrina*), 100.
vulgaris, Pullastra, 239.
vulgaris, Radula, 120.
VULSELLA, 88.
vulsella, Malleus, 105.
vulsella, Mya, 88.
vulsella, Vulsella, 88.
vulsellatus, Malleus, 105.

watsoni, Modiola, 74.
Watsoni, Modiola (*Trachydonta*), 74.
watsoni, Modiolus (Amygdalum), 74.
*weberi, Abra, 200.
*weberi, Arca (Barbatia), 49.
Weberi, Lima, 127.
*weberi, Neilonella, 28.
*weberi, Myadora, 321.
weinkauffi, Gari (Gari), 301.
Weinkauffi, Psammobia, 301.
wendti, Arca, 49.
wendti, Arca (Barbatia), 49.
Wendti, Barbatia, 49.
Wendti, Barbatia (*Acar*), 49.
Wiegmanii, Tichogonia, 70.
*winckworthi, Vesicomya, 153.
wollastonii, Cuspidaria, 328.
woodi, Verticordia, 324.
Woodwardi, Limopsis, 58.
wrightianus, Spondylus, 114.

XYLOPHAGA, 316.

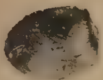
Yoldia, 19.
YOLDIA, 24.
Yoldia sp., 25.

zanzibarensis, Arca, 37.
zealandica, Lima, 120.
zebra, Arca, 33, 34.
zebra, Avicula, 91.
zebra, Electroma, 91.
zebra, Pteria, 91, 95.
zebra, Pteria (*Electroma*), 91.
zebuensis, Arca, 53, 54.
Zebuensis, Pinna, 133.
zeylanica, Cyclas, 174.
zeylanica, Cyrena, 174.
ziczac, Crassatella, 141.
zonalis, Psammobia, 300.
zonaria, Cytherea, 212.
zonaria, Cytherea (*Meretrix*), 213.
zonaria, Meretrix, 213.
zonaria, Venus, 213.

EXPLANATION OF PLATES

PLATE I.

Figs. 1, 2. *Nucula* (*Nucula*) *rugifera* sp. nov. Holotype from St. 173. × 3.
Figs. 3, 4. *Nucula* (*Nucula*) *diaphana* sp. nov. Holotype from St. 52. × 3.
Figs. 5, 6. *Nucula* (*Nucula*) *exodonta* sp. nov. Holotype from St. 300. × 3.
Figs. 7, 8. *Nucula* (*Nucula*) *bathybia* sp. nov. Holotype from St. 208. × 3.
Figs. 9, 10. *Nucula* (*Nucula*) *pachydonta* sp. nov. Holotype from St. 178. × 3.
Figs. 11, 12. *Nucula* (*Nucula*) *nimbosa* sp. nov. Holotype from St. 211. × 3.
Figs. 13, 14. *Nucula* (*Nucula*) *dautzenbergi* sp. nov. Holotype from St. 52. × 3.
Figs. 15, 16. *Nucula* (*Nucula*) *dautzenbergi* sp. nov. A younger shell from St. 52. × 3.
Figs. 17, 18. *Nuculana* (*Nuculana*) *sibogai* sp. nov. Holotype from St. 178. × 2.
Figs. 19, 20. *Nuculana* (*Nuculana*) *robsoni* nom. nov. A specimen from St. 4. × 3.
Figs. 21, 22. *Nuculana* (*Nuculana*) *procumbens* sp. nov. Holotype from St. 211. × 3.
Figs. 23, 24. *Nuculana* (*Nuculana*) *bathybia* sp. nov. Holotype from St. 178. × 3.
Figs. 25, 26. *Nuculana* (*Nuculana*) *approximans* sp. nov. Holotype from St. 59. × 2.
Figs. 27, 28. *Nuculana* (*Thestyleda*) *modica* sp. nov. Holotype from St. 52. × 3.
Fig. 29. *Nuculana* (*Thestyleda*) *modica* sp. nov. A large right valve from St. 212. × 3.
Figs. 30, 31. *Nuculana* (*Thestyleda*) *scalata* sp. nov. Holotype from St. 300. × 2.
Figs. 32, 33. *Nuculana* (*Thestyleda*) *elaborata* sp. nov. Holotype from St. 52. × 3.
Fig. 34. *Nuculana* (*Thestyleda*) *elaborata* sp. nov. A right valve from St. 52.
Figs. 35, 36. *Nuculana* (*Poroleda*) *parallelodonta* sp. nov. Holotype from St. 226. × 2.
Fig. 37. *Nuculana* (*Poroleda*) *sibogaensis* sp. nov. Left valve of Holotype from St. 178. × 2.
Figs. 38, 39. *Nuculana* (? *Ledella*) *discrepans* sp. nov. Holotype from St. 51. × 3.
Figs. 40, 41. *Malletia erronea* sp. nov. Holotype from St. 300. Natural size.
Figs. 42, 43. *Malletia erronea* sp. nov. Inner view of the valves to show the hinge. Natural size.
Figs. 44, 45. *Malletia encrypta* sp. nov. Holotype from St. 178. × 2.
Figs. 46, 47. *Malletia tripartita* sp. nov. Holotype from St. 211. × 3.
Figs. 48, 49. *Neilonella dubia* sp. nov. Fig. 48 is of the valve of the right Holotype and fig. 49 of another right valve from St. 52. × 3.
Figs. 50, 51. *Neilonella schepmani* sp. nov. Holotype from St. 221. × 3.
Figs. 52, 53. *Neilonella delicatula* sp. nov. Holotype from St. 211. × 3.
Figs. 54—57. *Anomia* (*Anomia*) *achaeus* Gray. Four valves of different shapes from St. 179. Natural size.
Figs. 58, 59. *Arca* (*Barbatia*) *paulucciana* Tapparone-Canefri. A shell from St. 163. Natural size.
Figs. 60, 61. *Arca* (*Barbatia*) *wendti* Lamy. A shell from St. 34. × 3.
Figs. 62, 63. *Arca* (*Barbatia*) *weberi* sp. nov. Holotype from St. 222. × 2.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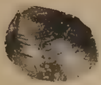
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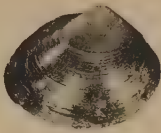
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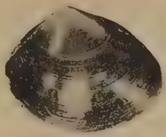
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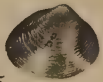
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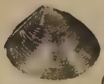
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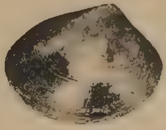
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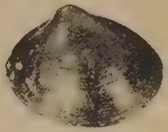
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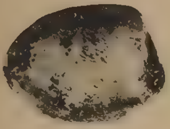
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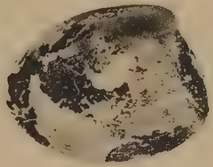
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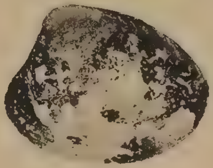
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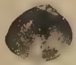
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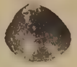
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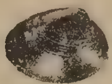
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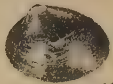
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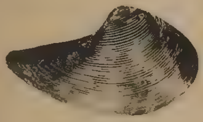
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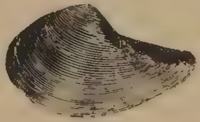
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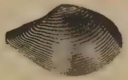
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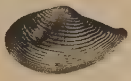
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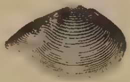
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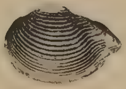
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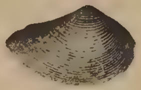
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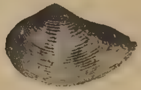
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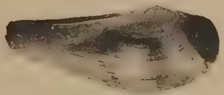
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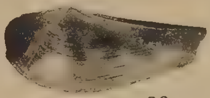
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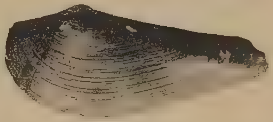
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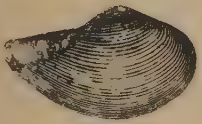
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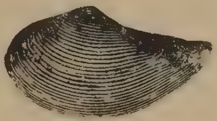
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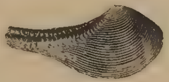
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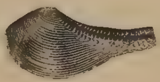
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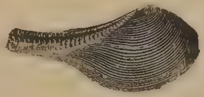
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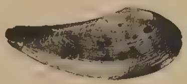
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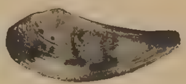
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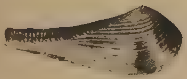
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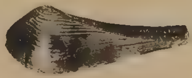
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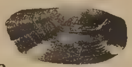
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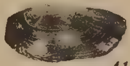
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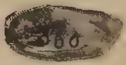
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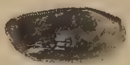
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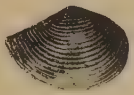
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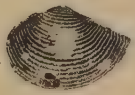
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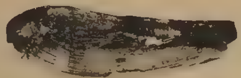
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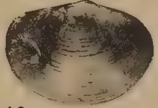
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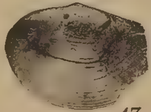
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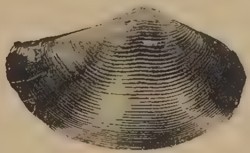
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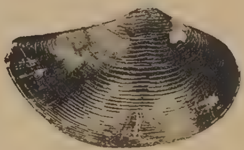
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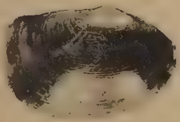
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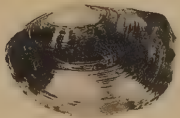
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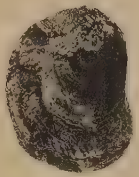
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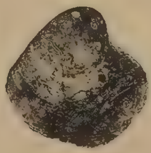
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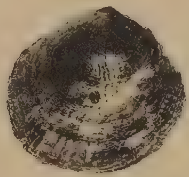
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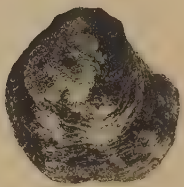
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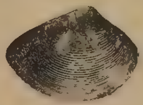
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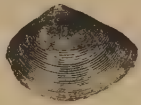
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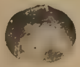
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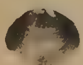
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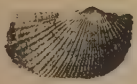
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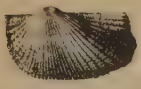
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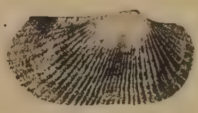
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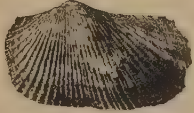
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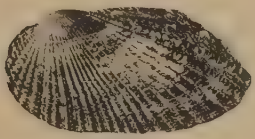
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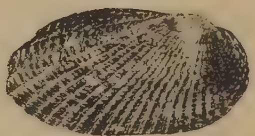
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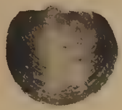
PLATE II.

Figs. 1—3. *Arca* (*Bathyarca*) *sibogai* sp. nov. 3 valves of the type-series from St. 211. Natural size.
Fig. 4. *Arca* (*Bathyarca*) sp. A right valve from St. 159. Natural size.
Figs. 5, 6. *Arca* (*Bathyarca*) sp. Two left valves from St. 212. Natural size.
Figs. 7, 8. *Limopsis lata* Smith. A shell from St. 52. × 2.
Figs. 9, 10. *Limopsis belcheri* (Adams & Reeve). A shell from St. 95. Natural size.
Figs. 11, 12. *Limopsis belcheri* (Adams & Reeve). Inner views of the valves figured as figs. 9, 10. Natural size.
Figs. 13, 14. *Limopsis dautzenbergi* sp. nov. Two valves of the type-series from St. 90. × 3.
Figs. 15—18. *Glycymeris dautzenbergi* sp. nov. Holo- and Paratypes from St. 313. Natural size.
Figs. 19, 20. *Glycymeris maskatensis* (Melvill). An adult shell from the Persian Gulf. Natural size.
Figs. 21—24. *Brachidontes* (*Septifer*) *bilocularis* (Linn.). Two shells from St. 50. Natural size.
Figs. 25, 26. *Modiolus* (*Modiolus*) *philippinarum* (Hanley). A typical shell from St. 64. Natural size.
Figs. 27, 28. *Modiolus* (*Modiolus*) *flavidus* (Dunker). A typical shell from St. 311. Natural size.
Figs. 29—31. *Modiolus* (*Modiolus*) *dubius* sp. nov. The first two figures are of the Holotype and the third of a young left valve from St. 297. × 3.
Figs. 32, 33. *Modiolus* (*Amygdalum*) *watsoni* Smith. An adult shell from St. 300. Natural size.
Figs. 34, 35. *Musculus cuneatus* (Gould). A young shell from St. 37. Natural size.
Figs. 36, 37. *Musculus impactus* (Hermann). An adult shell from New Zealand. Natural size.
Figs. 38, 39. *Lithophaga* (*Lithophaga*) *teres* (Philippi). An adult shell from St. 71. Natural size.
Figs. 40, 41. *Lithophaga* (*Lithophaga*) *nasuta* (Philippi). An adult shell from St. 93. Natural size.
Figs. 42, 43. *Lithophaga* (*Lithophaga*) *levigata* (Quoy & Gaimard). An adult shell from St. 34. Natural size.
Figs. 44, 45. *Solamen sibogae* sp. nov. Holotype from St. 5. Natural size.
Figs. 46—49. *Vulsella minor* Röding. Two shells from St. 19. Natural size.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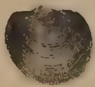
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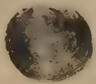
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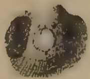
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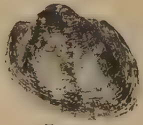
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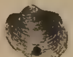
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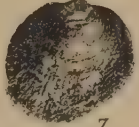
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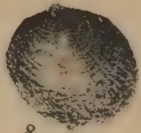
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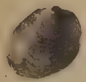
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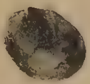
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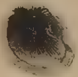
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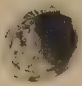
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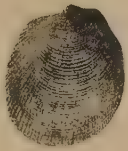
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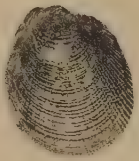
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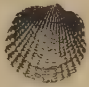
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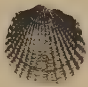
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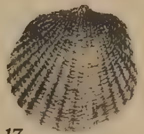
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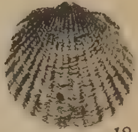
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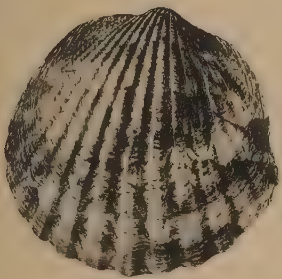
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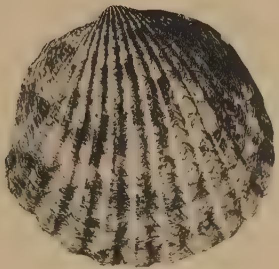
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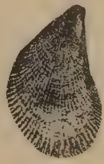
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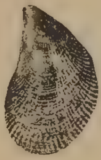
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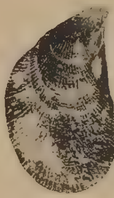
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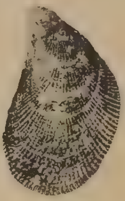
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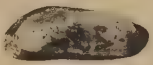
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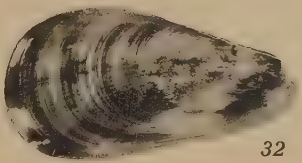
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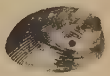
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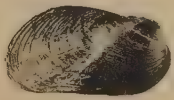
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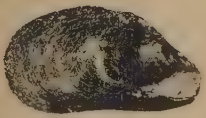
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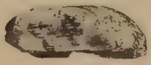
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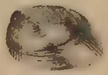
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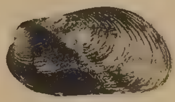
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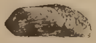
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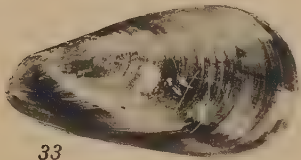
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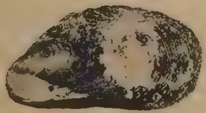
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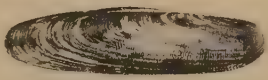
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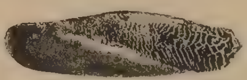
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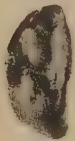
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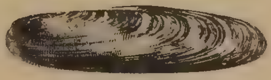
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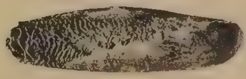
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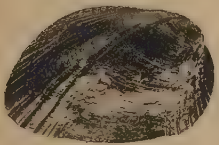
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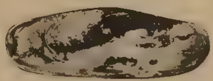
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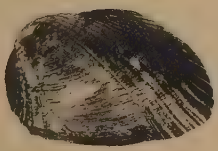
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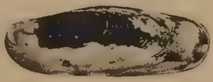
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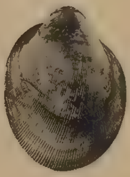
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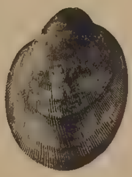
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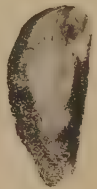
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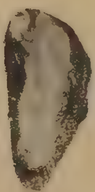
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PLATE III.

Figs. 1, 2. *Pteria triangularis* sp. nov. Holotype from St. 166. Natural size.
Figs. 3, 4. *Pteria tomlini* sp. nov. Holotype from St. 299. × 2.
Figs. 5—8. *Pinctada anomioides* (Reeve). Two shells from St. 53. Natural size.
Figs. 9, 10. *Pinctada scheepmakeri* (Dunker). A shell from St. 50. Natural size.
Figs. 11, 12. *Pinctada scheepmakeri* (Dunker). Inner views of the two valves. Natural size.
Figs. 13—18. *Malleus daemonicus* (Reeve). A series of shells of different ages from St. 93 and St. 240. Natural size.
Figs. 19, 20. *Spondylus serraticosta* sp. nov. Holotype from St. 260. Natural size.
Figs. 21, 22. *Dimya lima* Bartsch. Outer and inner views of a valve from St. 256. Natural size.
Figs. 23, 24. *Lima* (*Lima*) *lima* (Linn.). A young shell from St. 93. Natural size.
Figs. 25—28. *Lima* (*Lima*) *lischkei* Lamy. Two shells from St. 260 and St. 240 respectively. Natural size.
Figs. 29—31. *Lima* (*Lima*) *tomlini* sp. nov. Holotype from St. 251. Figs. 29, 30 are natural size, and figure 31 is enlarged three times to show the characteristic sculpture.
Figs. 32, 33. *Lima* (*Limaria*) *orientalis* Adams & Reeve. A shell from St. 261. Natural size.
Figs. 34, 35. *Lima angulata* Sowerby. A shell from Panama. Natural size.
Fig. 36. *Lima* (*Limaria*) *fenestrata* sp. nov. A valve of the Holotype from St. 316. Natural size.

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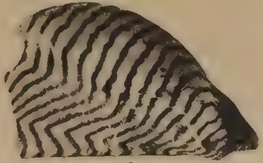
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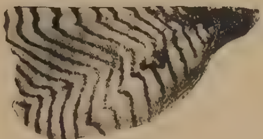
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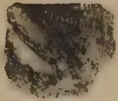
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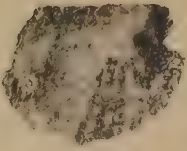
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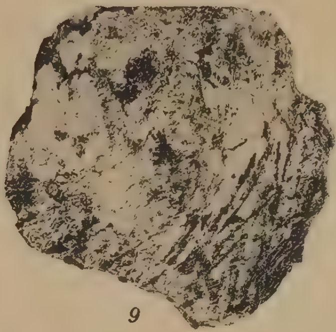
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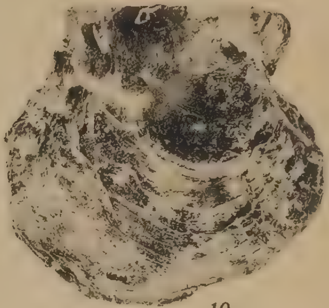
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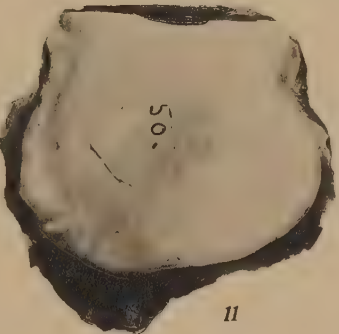

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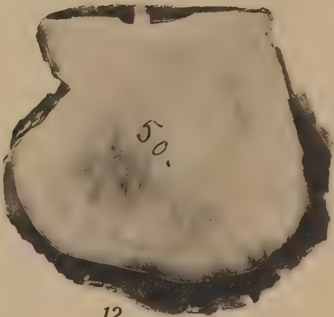

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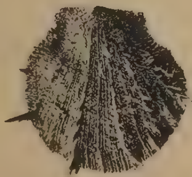
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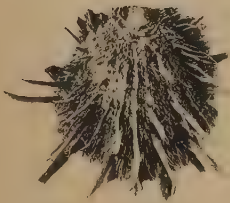
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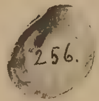

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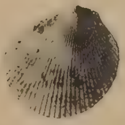
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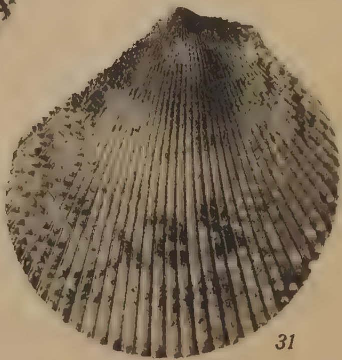
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PLATE IV.

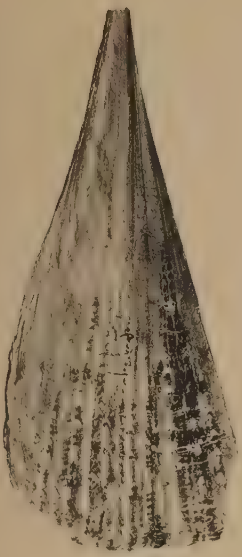
Figs. 1—6. *Lima* (*Acesta*) *celebensis* Bartsch. 3 shells of different ages from St. 259, St. 314 and St. 316 respectively. Natural size.

Figs. 7, 8. *Lima* (*Limatula*) *leptocarya* Melvill. A shell from the Persian Gulf. Natural size.

Figs. 9, 10. *Lima* (*Limatula*) *sibogai* sp. nov. A shell from St. 208. Natural size.

Figs. 11—13. *Pinna* (*Atrina*) *strangei* Reeve. Two shells from St. 172 and St. 193. Natural size.

Figs. 14, 15. *Pinna* (*Atrina*) *penna* Reeve. A shell from St. 240. Natural size.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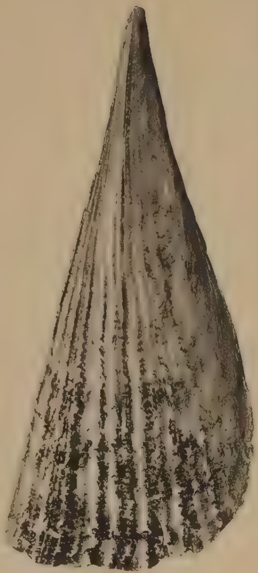
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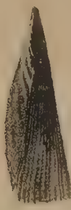
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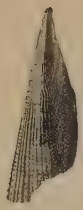
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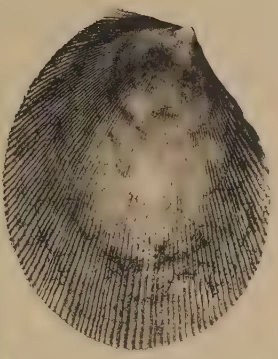
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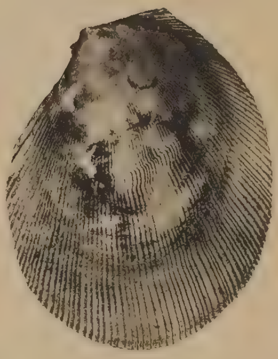
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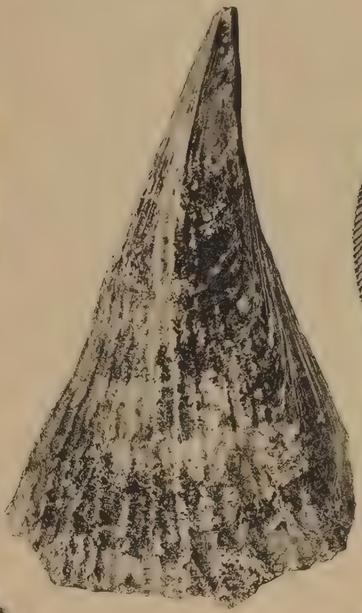
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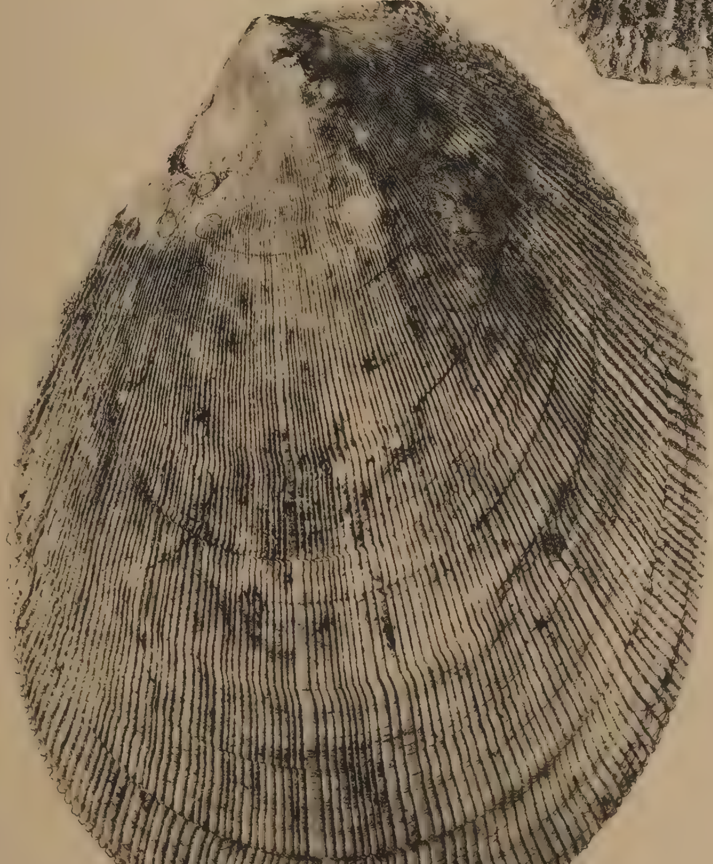
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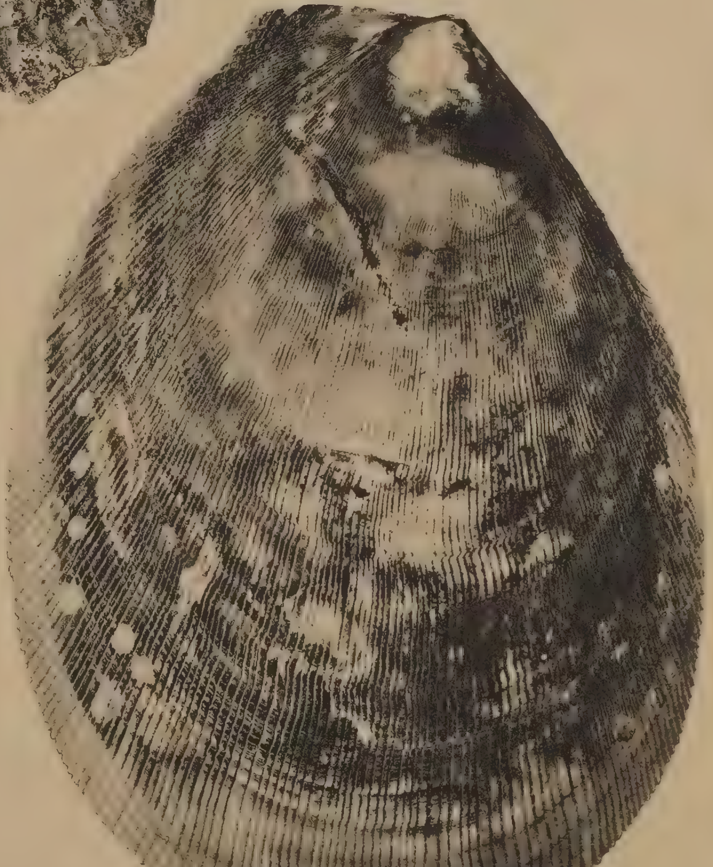
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PLATE V.

Figs. 1, 2. *Cardita* (*Venericardia*) *pelseneeri* sp. nov. Holotype from St. 260. × 2.

Figs. 3, 4. *Isocardia* (*Meiocardia*) *tetragona* Adams & Reeve. A full-grown shell from St. 105. Natural size.

Figs. 5, 6. *Vesicomya compressa* sp. nov. Outer and inner views of left valve of Holotype from St. 18. Natural size.

Figs. 7, 8. *Vesicomya winckworthi* sp. nov. Outer and inner views of right valve of Holotype from St. 17. Natural size.

Figs. 9, 10. *Dentilucina* (*Dentilucina*) *inanis* sp. nov. Fig. 9 of Holotype and fig. 10 of paratype from St. 312. × 3.

Figs. 11, 12. *Dentilucina* (*Callucina*) *flabelliformis* sp. nov. Holotype from St. 256. × 3.

Figs. 13—16. *Dentilucina* (*Bellucina*) *macassari* sp. nov. Outer and inner views of the Holotype from St. 71. × 3.

Figs. 17, 18. *Dentilucina* (*Bellucina*) *hedleyi* sp. nov. Holotype St. 105. × 3.

Figs. 19, 20. *Dentilucina* (*Bellucina*) *hedleyi* var. *quadrata* nov. Holotype from St. 212. × 3.

Figs. 21—23. *Diplodonta lamyi* sp. nov. Three valves from St. 311. × 2.

Figs. 24, 25. *Pythina deshayesiana* Hinds. A shell from St. 127. × 3.

Figs. 26, 27. *Montacuta smithi* sp. nov. Holotype from St. 176. × 3.

Fig. 28. *Montacuta pelseneeri* sp. nov. A valve of Holotype from St. 50. × 3.

Figs. 29, 30. *Montacuta* (*Mysella*) *sibogai* sp. nov. Holotype from St. 133. × 6.

Figs. 31, 32. *Montacuta* (*Mysella*) *arcuata* (A. Adams). A typical shell from the Philippines. × 3.

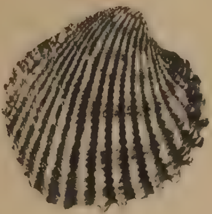
Fig. 33. *Tellina* (*Tellina*) *deshayesii* Hanley. A left valve from St. 296. × 2.

Figs. 34, 35. *Tellina* (*Tellina*) *patagiata* sp. nov. Holotype from St. 260. × 3.

Fig. 36. *Tellina* (? *Arcopagia*) *fabrefacta* Pilsbry. A valve from Macassar. × 3.

Figs. 37, 38. *Tellina* (*Angulus*) *rhodon* Hanley. 2 valves from St. 4 and St. 279 respectively. Natural size.

Figs. 39, 40. *Tellina* (*Peronidia*) *macassariensis* sp. nov. Holotype from St. 71. × 3.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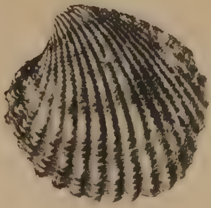
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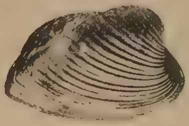
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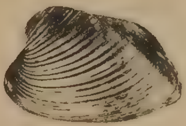
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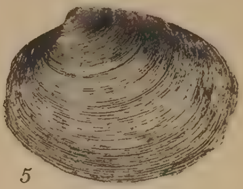
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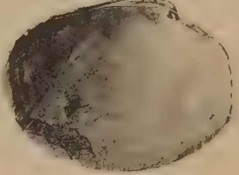
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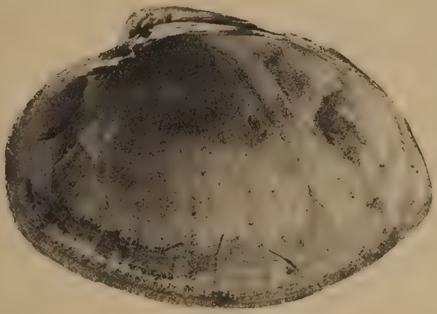
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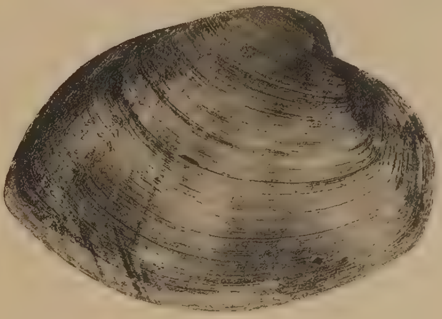
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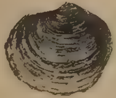
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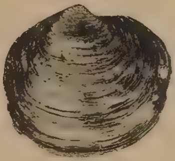
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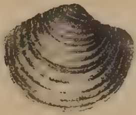
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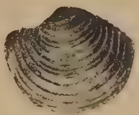
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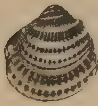
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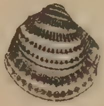
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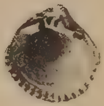
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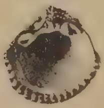
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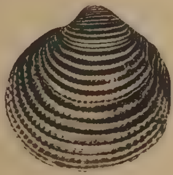
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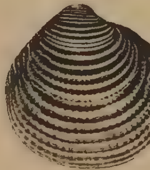
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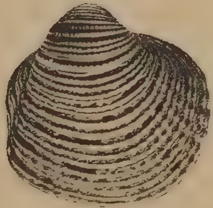
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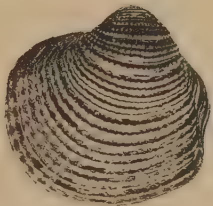
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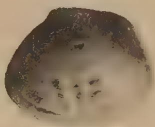
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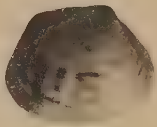
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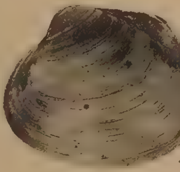
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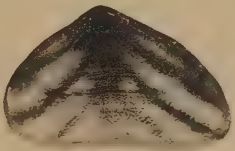
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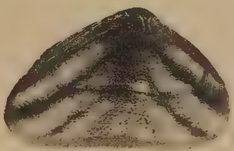
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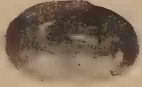
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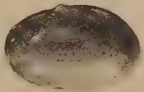
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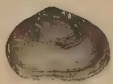
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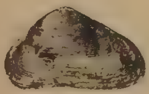
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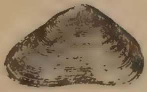
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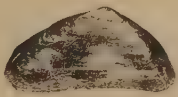
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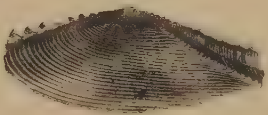
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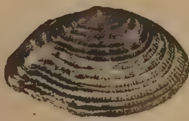
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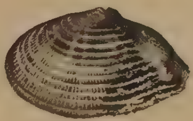
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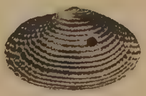
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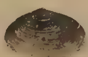
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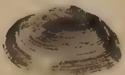
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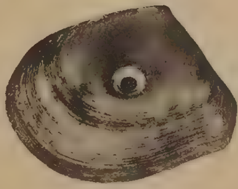
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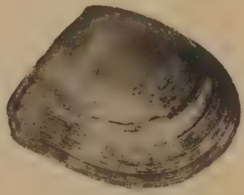
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PLATE VI.

Figs. 1, 2. *Abra sibogai* sp. nov. Holotype from St. 45. Natural size.

Figs. 3, 4. *Mactra* (*Mactrinula*) *dolabrata* Reeve. A specimen from St. 273. Natural size.

Figs. 5, 6. *Macrocallista roseotincta* (Smith). A specimen from St. 279.

Figs. 7—10. *Hysteroconcha* (? *Lamelliconcha*) *philippinarum* (Hanley). Two shells from St. 213 and St. 279 respectively. Natural size.

Figs. 11, 12. *Hysteroconcha* (? *Lamelliconcha*) *dautzenbergi* sp. nov. Holotype from St. 240. × 2.

Figs. 13, 14. *Circe nana* Melvill. A shell from St. 285. × 3.

Figs. 15, 16. *Gafrarium catillus* Hedley. A shell from St. 99. Natural size.

Figs. 17—20. *Dosinia* (*Austrodosinia*) *conglobata* Römer. Outer and inner views of a shell from St. 71. Natural size.

Figs. 21, 22. *Chione* (*Timoclea*) *mindanensis* Smith. A shell from St. 105. × 3.

Figs. 23, 24. *Chione* (*Timoclea*) *crassisquamata* sp. nov. Holotype from the Anchorage off Noimini (St. 296).

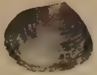
Figs. 25, 26. *Cardium* (*Trachycardium*) *sewelli* sp. nov. Holotype from St. 133. Natural size.

Figs. 27, 28. *Cardium* (*Trachycardium*) *beauforti* sp. nov. Holotype from St. 313. Natural size.

Figs. 29—32. *Cardium* (? *Ctenocardia*) *festivum* Deshayes. Two shells from St. 37. Natural size.

Figs. 33, 34. *Corculum cardissa* (Linn.). Side view of a valve and both valves united from St. 193. Natural size.

Figs. 35, 36. *Corculum cardissa* (Linn.) var. *monstrosum* (Gmelin). Side view of a valve and both valves united from St. 313. Natural size.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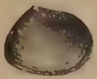
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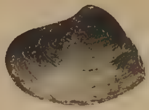
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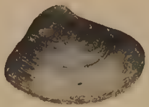
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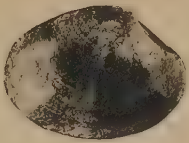
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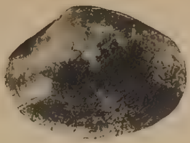
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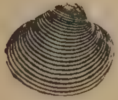
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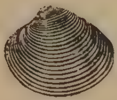
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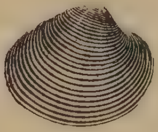
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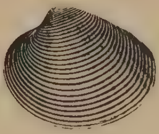
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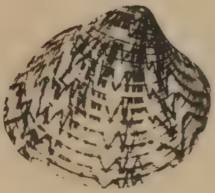
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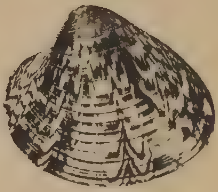
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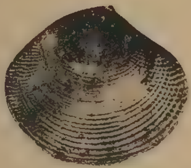
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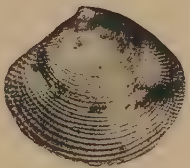
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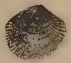
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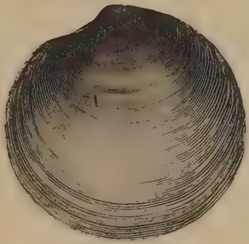
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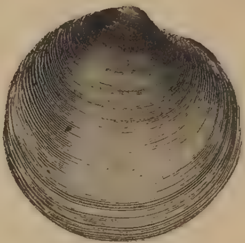
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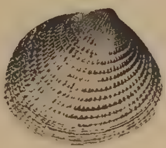
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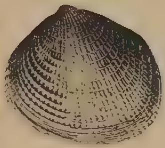
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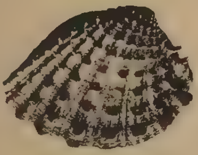
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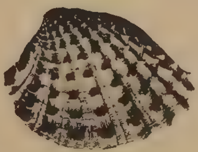
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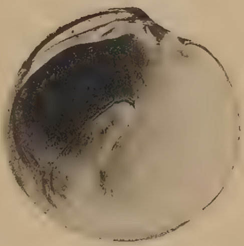
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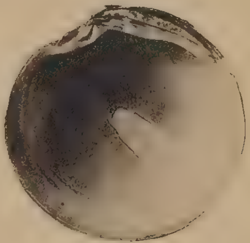
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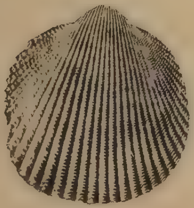
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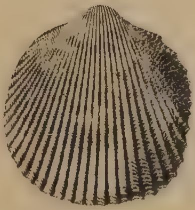
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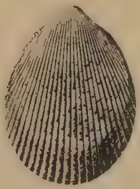
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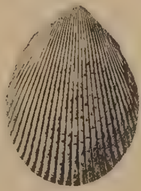
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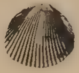
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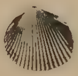
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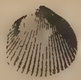
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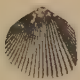
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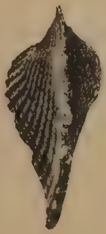
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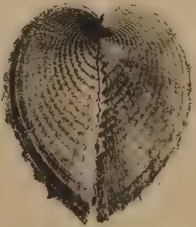
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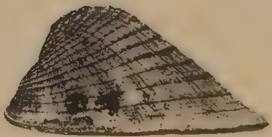
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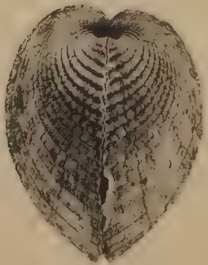
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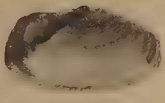
PLATE VII.

Figs. 1, 2. *Gari* (*Gari*) *schepmani* sp. nov. Holotype from St. 311. Natural size.
Figs. 3, 4. *Gari* (*Gari*) *sibogai* sp. nov. Holotype from St. 240. × 2.
Figs. 5—8. *Aloidis crassa* (Hinds). The two valves of a shell, and also dorsal and ventral views of the two valves united from St 311. Natural size.
Figs. 9, 10. *Xylophaga tomlini* sp. nov. Holotype from St. 88. × 2.
Figs. 11, 12. *Myadora weberi* sp. nov. Holotype from St. 212. × 3.
Figs. 13, 14. *Myadora sp.* Outer and inner views of a single valve from St. 256. Natural size.
Figs. 15—18. *Calopodium* (*Kennerlia*) *carinatum* sp. nov. Outer and inner views of two valves of the Holotype from St. 159. × 3.
Figs. 19, 20. *Verticordia* (*Verticordia*) *crebrilirata* sp. nov. Holotype from St. 97. × 3.
Figs. 21, 22. *Verticordia* (?) *expansa* sp. nov. Holotype from St. 178. × 3.
Figs. 23, 24. *Lyonsiella pilula* sp. nov. Holotype from St. 88. × 3.
Figs. 25, 26. *Lyonsiella smithi* sp. nov. Holotype from St. 178. × 3.
Figs. 27, 28. *Poromya* (*Poromya*) *pergranosa* sp. nov. Holotype from St. 154. × 3.
Figs. 29, 30. *Poromya* (*Cetoconcha*) *gloriosa* sp. nov. Holotype from St. 306. Natural size.
Figs. 31, 32. *Poromya* (*Cetoconcha*) *eximia* sp. nov. Holotype from St. 314. Natural size.
Figs. 33, 34. *Poromya* (*Cetoconcha*) *butoni* sp. nov. Holotype from St. 204. × 3.
Fig. 35. *Cuspidaria* (*Cuspidaria*) *mitis* sp. nov. Right valve from St. 17. Natural size.
Figs. 36, 37. *Cuspidaria* (*Cuspidaria*) *convexa* sp. nov. Holotype from St. 314. × 3.
Fig. 38. *Cuspidaria* (*Cuspidaria*) *gigantea* sp. nov. Right valve of Holotype from St. 159. Natural size.
Fig. 39. *Cuspidaria* (*Cuspidaria*) *corrugata* sp. nov. Right valve of Holotype from St. 47. Natural size.
Figs. 40, 41. *Cuspidaria* (*Cuspidaria*) *tomlini* sp. nov. Holotype from St. 105. × 3.
Figs. 42, 43. *Cuspidaria* (*Cuspidaria*) *solidula* sp. nov. Holotype from St. 95. × 3.
Fig. 44. *Cuspidaria* (*Cardiomya*) *persculpta* sp. nov. Right valve of Holotype from St. 52.
Figs. 45, 46. *Cuspidaria* (*Cardiomya*) *multicarinata* sp. nov. Holotype from St. 90. × 3.
Figs. 47, 48. *Cuspidaria* (*Cardioyma*) *semicostata* sp. nov. Two left valves, fig. 46 of Holotype from St. 159. × 3.
Figs. 49, 50. *Cuspidaria* (*Rhinoclama*) *dubia* sp. nov. Holotype from St. 221. × 3.
Fig. 51. *Myonera dautzenbergi* sp. nov. Holotype from St. 52.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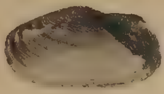
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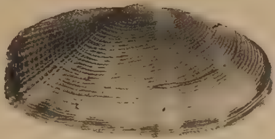
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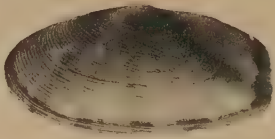
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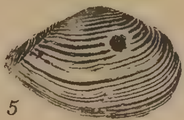
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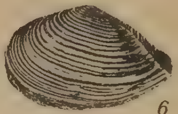
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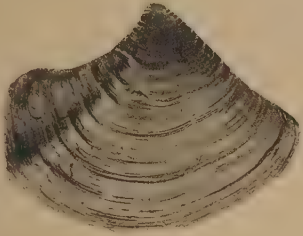
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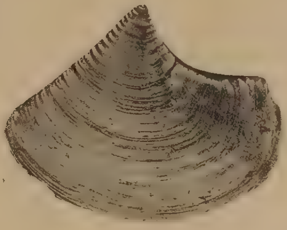
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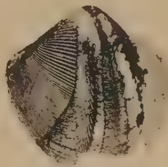
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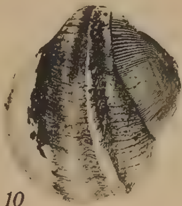
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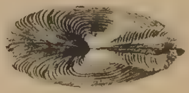
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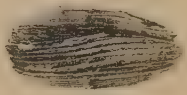
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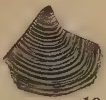
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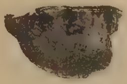
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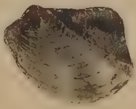
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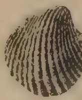
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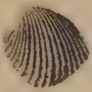
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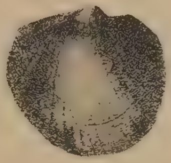
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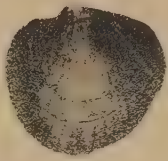
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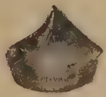
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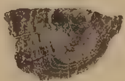
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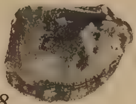
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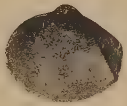
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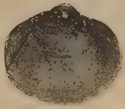
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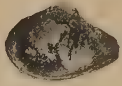
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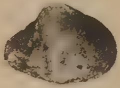
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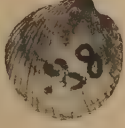
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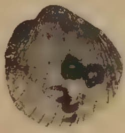
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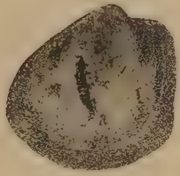
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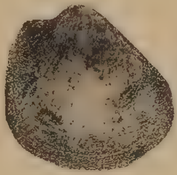
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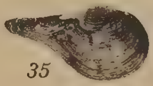
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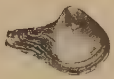
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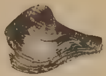
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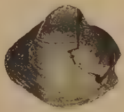
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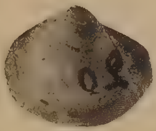
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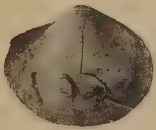
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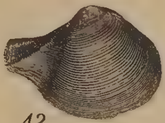
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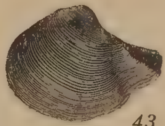
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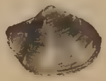
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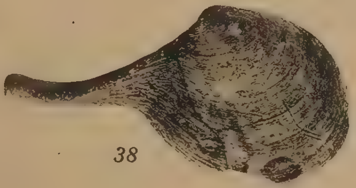
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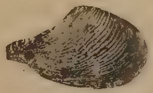
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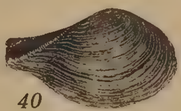
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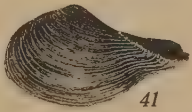
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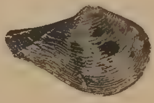
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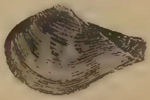
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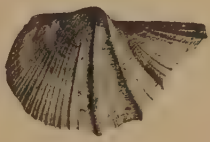
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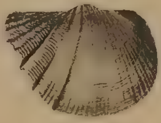
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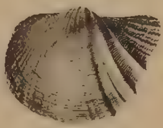
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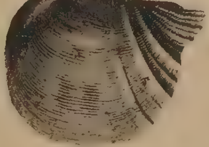
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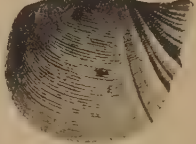
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PLATE VIII.

Figs. 1, 2. *Nuculana* (*Poroleda*) *parallelodonta* sp. nov. Hinge of the Holotype from St. 226. × 5.
Figs. 3, 4. *Malletia humilior* sp. nov. Right valve (× 6) and hinge of the Holotype (× 8) from St. 88.
Figs. 5, 6. *Neilonella weberi* sp. nov. Holotype from St. 271. × 8.
Figs. 7, 8. *Neilonella weberi* sp. nov. Hinge of Holotype. × 10.
Figs. 9, 10. *Arca* (*Bathyarca*) *anaclima* Melvill. A shell from St. 88. × 9.
Figs. 11, 12. *Pteria sibogae* sp. nov. Holotype from St. 322. × 2.
Figs. 13, 14. *Lima* (*Limatula*) *sibogai* sp. nov. Holotype from St. 208. × 4.
Figs. 15, 16. *Glossocardia stoliczkana* sp. nov. Holotype from St. 97. × 2.
Figs. 17, 18. *Glossocardia stoliczkana* sp. nov. Hinge of Holotype. × 3.

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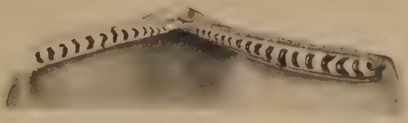
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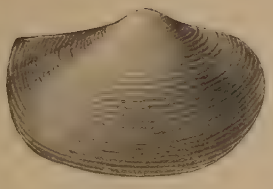
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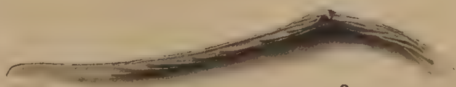
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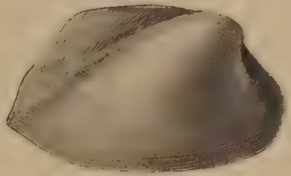
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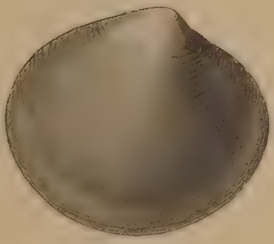
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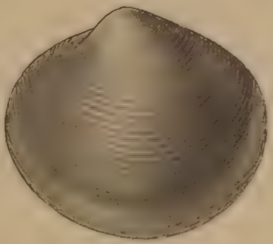
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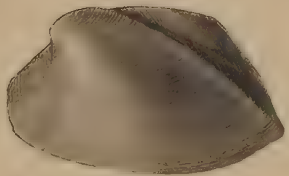
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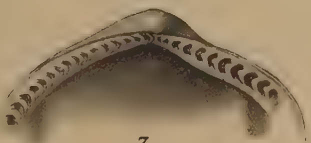
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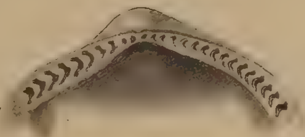
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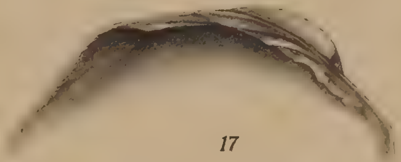
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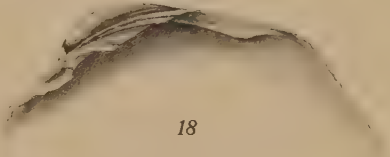
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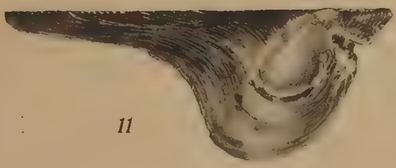
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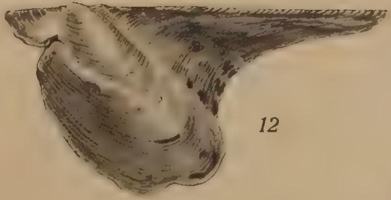
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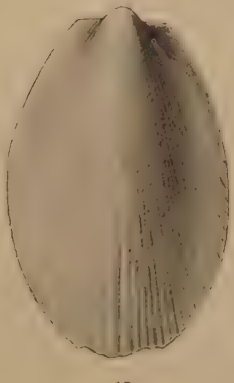
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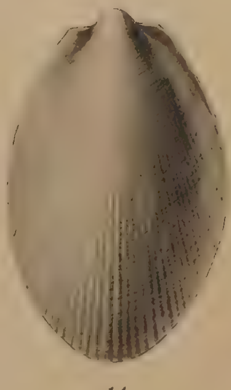
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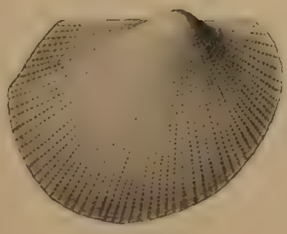
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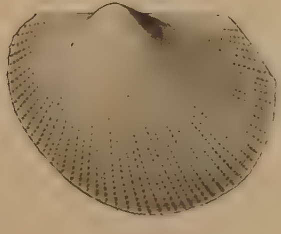
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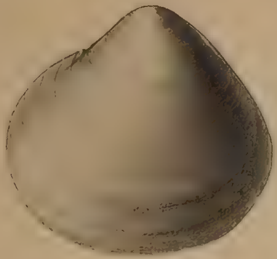
PLATE IX.

Figs. 1, 2. *Vesicomya solidissima* sp. nov. Holotype from St. 18. Natural size.
Figs. 3, 4. *Vesicomya solidissima* sp. nov. Hinge of Holotype. Natural size.
Figs. 5, 6. *Diplodonta dubia* sp. nov. Holotype from St. 279. × 4.
Figs. 7, 8. *Diplodonta dubia* sp. nov. Hinge of Holotype. × 5.
Figs. 9, 10. *Isoconcha sibogai* Gen. et sp. nov. Holotype from St. 300. × 6.
Figs. 11, 12. *Isoconcha sibogai* Gen. et sp. nov. Hinge of Holotype. × 8.
Figs. 13, 14. *Abra inanis* sp. nov. Holotype from St. 159. × 3.
Figs. 15, 16. *Abra weberi* sp. nov. Holotype from St. 306. × 3.
Fig. 17. *Cuspidaria* (*Cuspidaria*) *macrorhynchus* Smith. A right valve from St. 104. × 4.
Figs. 18, 19. *Cuspidaria* (*Cardiomya*) *sibogai* sp. nov. Holotype from St. 48. × 2.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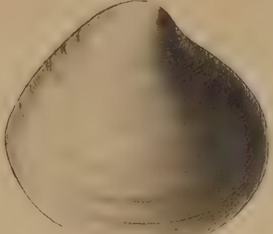
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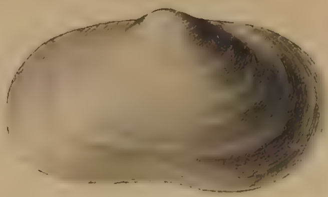
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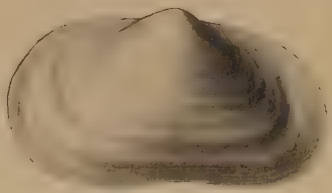
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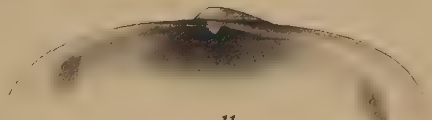
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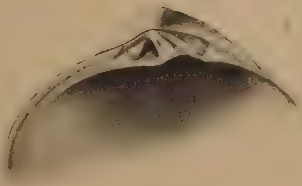
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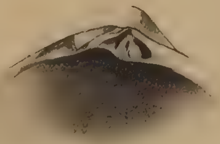
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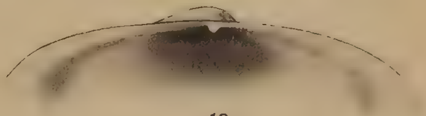
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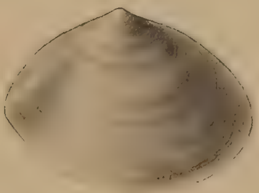
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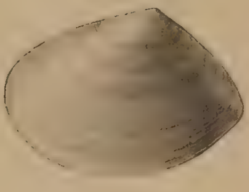
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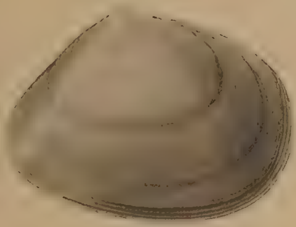
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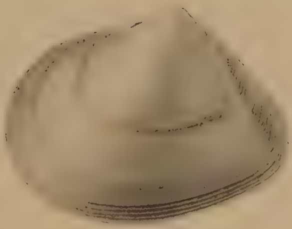
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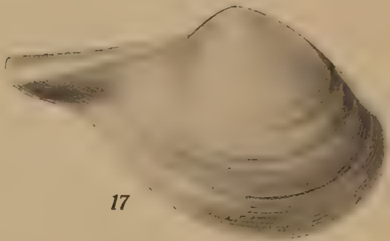
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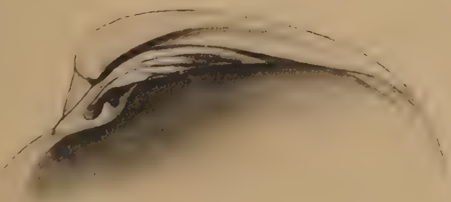
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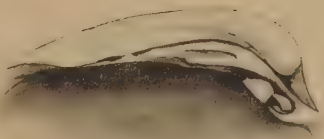
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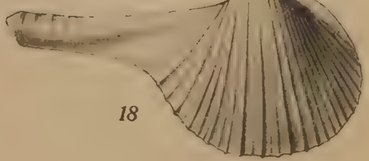
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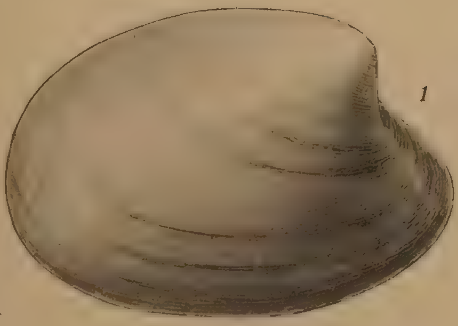
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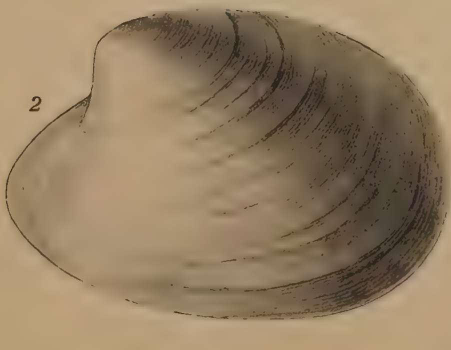
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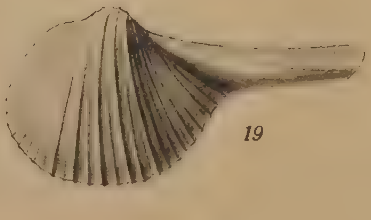
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SIBOGA-EXPEDITIE

RÉSULTATS DES EXPLORATIONS ZOOLOGIQUES, BOTANIQUES, OCÉANOGRAPHIQUES ET GÉOLOGIQUES

ENTREPRISES AUX INDES NÉERLANDAISES ORIENTALES EN 1899—1900

À BORD DU SIBOGA SOUS LE COMMANDEMENT DE

G. F. TYDEMAN

1ER LIEUTENANT DE MARINE

PUBLIÉS PAR

MAX WEBER

CHEF DE L'EXPÉDITION

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